HCD-MDX10

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model
Australian Model

Self Diagnostics Supported model

HCD-MDX10 is the tuner, deck, CD, MD and amplifier section in MHC-MDX10.

This stereo system is equipped with the Dolby B-type noise reduction system*.
* Manufactured under license from Dolby Laboratories Licensing Corporation.
DOLBY and the double-D symbol DD are trademarks of Dolby Laboratories Licensing Corporation.

CD SECTION	Model Name Using Similar Mechanism	NEW
	Mechanism Type	CDM38LH-5BD32L
	Base Unit Type	BU-5BD32L
	Optical Pick-up Type	KSS-213D/Q-NP
MD SECTION	Model Name Using Similar Mechanism	MDS-JE520
	Mechanism Type	MDM-5A
	Optical Pick-up Type	KMS-260A/K1NP
TAPE DECK SECTION	Model Name Using Similar Mechanism	HCD-DR4/DR5/DR6/DR440/ W300/W5000/XB500
	Tape Transport Mechanism Type	TCM-230AWR2/230PWR2

SPECIFICATIONS

Amplifier section

Canadian model:
Continuous RMS power output (reference)
50 + 50 watts
(6 ohms at 1 kHz, 10% THD)
Total harmonic distortion less than 0.07%
(6 ohms at 1 kHz, 25 W)

European model:
DIN power output (rated) 60 + 60 watts
(6 ohms at 1 kHz, DIN)
Continuous RMS power output (reference)
80 + 80 watts
(6 ohms at 1 kHz, 10% THD)
Music power output (reference)
140 + 140 watts
(6 ohms at 1 kHz, 10% THD)

Other models:
The following measured at AC 110, 220 V 50/60 Hz
DIN power output (rated) 80 + 80 watts
(6 ohms at 1 kHz, DIN)
Continuous RMS power output (reference)
100 + 100 watts
(6 ohms at 1 kHz, 10% THD)

The following measured at AC 120, 240 V 50/60 Hz
DIN power output (rated) 95 + 95 watts
(6 ohms at 1 kHz, DIN)
Continuous RMS power output (reference)
120 + 120 watts
(6 ohms at 1 kHz, 10% THD)

Inputs
VIDEO (AUDIO) IN: (phono jacks) voltage 250 mV, impedance 47 kilohms
MIX MIC: (phone jack) sensitivity 1 mV, impedance 10 kilohms

Outputs
PHONES: (stereo mini jack) accepts headphones of 8 ohms or more
SPEAKER: accepts impedance of 6 to 16 ohms
SUPER WOOFER (except for European model): voltage 1V, impedance 1 kilohm

CD player section

System	Compact disc and digital audio system
Laser	Semiconductor laser (λ=780nm) Emission duration: continuous
Laser output	Max. 44.6 μW* *This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block with 7 mm aperture.
Frequency response	2 Hz – 20 kHz (±0.5 dB)
Wavelength	780 – 790 nm
Signal-to-noise ratio	More than 85 dB
Dynamic range	More than 85 dB

— Continued on next page —

COMPACT DISC DECK RECEIVER

MICROFILM

SONY®

MD deck section

System	MiniDisc digital audio system
Laser	Semiconductor laser (λ=780 nm) Emission duration: continuous
Laser output	Max. 44.6 μW* *This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block with a 7 mm aperture.
Recording time	80 minutes max. (using MDW-80, stereo) 160 minutes max. (using MDW-80, monaural)
Sampling frequency	44.1 kHz
Frequency response	20 - 20,000 Hz

OPTICAL DIGITAL IN
(Square optical connector jacks, rear panel)

Wavelength	700 nM

Tape player section

Recording system	4-track 2-channel stereo
Frequency response (DOLBY NR OFF)	40 – 13,000 Hz (±3 dB), using Sony TYPE I cassette 40 – 14,000 Hz (±3 dB), using Sony TYPE II cassette

Tuner section

FM stereo, FM/AM superheterodyne tuner

FM tuner section

Tuning range	87.5 – 108.0 MHz
Antenna	FM lead antenna
Antenna terminals	75 ohm unbalanced
Intermediate frequency	10.7 MHz

AM tuner section

Tuning range	
2 Band type:	
North American models:	530 – 1,710 kHz (with the interval set at 10 kHz) 531 – 1,710 kHz (with the interval set at 9 kHz)
European models:	531 – 1,602 kHz (with the interval set at 9 kHz)
Other models:	531 – 1,602 kHz (with the interval set at 9 kHz) 530 – 1,710 kHz (with the interval set at 10 kHz)
3 Band type:	
Middle Eastern models:	
MW:	531 – 1,602 kHz (with the interval set at 9 kHz)
SW:	5.95 – 17.90 MHz (with the interval set at 5 kHz)
Other models:	
MW:	531 – 1,602 kHz (with the interval set at 9 kHz) 530 – 1,710 kHz (with the interval set at 10 kHz)
SW:	5.95 – 17.90 MHz (with the interval set at 5 kHz)
Antenna	AM loop antenna
Antenna terminals	External antenna terminal
Intermediate frequency	450 kHz

General

Power requirements	
North American models:	120 V AC, 60 Hz
European models:	230 V AC, 50/60 Hz
Australian models:	240 V AC, 50/60 Hz
Mexican models:	120 V AC, 50/60 Hz
Other models:	110 - 120 V or 220 - 240 V AC, 50/60 Hz
Power consumption	
U.S.A. models:	115 watts
Canadian model:	95 watts
European models:	165 watts
Other models:	170 watts
Dimensions (w/h/d)	Approx. 280 x 360 x 390 mm (11 x 13 3/8 x 15 in.)
Mass	
North American models:	10.0 kg
European models:	10.2kg
Other models:	11.0kg

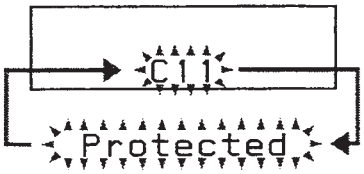
Design and specifications are subject to change without notice.

SELF-DIAGNOSIS FUNCTION

The self-diagnosis function consists of error codes for customers which are displayed automatically when errors occur, and error codes which show the error history in the test mode during servicing. For details on how to view error codes for the customer, refer to the following box in the instruction manual. For details on how to check error codes during servicing, refer to the following "Procedure for using the Self-Diagnosis Function (Error History Display Mode)".

Self-diagnosis Display

This system has the Self-diagnosis display function to let you know if there is a system malfunction. The display shows a code made up of three letters and a message alternately to show you the problem. To solve the problem refer to the following list. If any problem persists, consult your nearest Sony dealer.



C11 / Protected
The MD is protected against erasure.
→Remove the MD and slide the tab to close the slot (page 30).

C12 / Cannot Copy
The MD is an incompatible format type.
→Change the MD with another one.

C13 / REC Error
Recording is not possible.
→Move the system to a stable place and start recording over from the beginning.
The MD is dirty or is scratched or the MD does not meet the standards.
→Change the MD with another one and start recording over from the beginning.

C13 / Read Error
The MD cannnot read the disc information correctly.
→Eject the MD once, then insert it again.

C14 / Toc Error
The MD cannnot read the disc information correctly.
→Change the MD with another one.
→Erase all the recorded contents of the MD using the Erase function on page 42.

C41 / Cannot Copy
This unit complies with the Serial Copy Management System (SCMS) which limits the number of digital copies that can be made of any given digital audio source (page 79).

C71 / Check OPT-IN
You tried to record from the digital component when no component is connected to OPTICAL IN jack or the digital component is not connected correctly.
→Connect the digital component correctly to OPTICAL IN jack with a digital optical cable.
The power of the connected digital component is off.
→Turn on the digital component.

Procedure for using the Self-Diagnosis Function (Error History Display Mode).

Note: Perform the self-diagnosis function in the "error history display mode" in the test mode. The following describes the least required procedure. Be careful not to enter other modes by mistake. If you set other modes accidentally, press the MENU/NO button to exit the mode.

1. With the power ON, press the CD-MD SYNC button while pressing the ■ and ENTER/YES buttons together.
2. Rotate the AMS dial and when "Service" is displayed, press the YES button.
3. Rotate the AMS dial and display "ERR DP MODE".
4. Pressing the ENTER/YES button sets the error history mode and displays "total rec".
5. Select the contents to be displayed or executed using the AMS dial.
6. Pressing the MD WALKMAN SYNC button will display or execute the contents selected.
7. Pressing the MD WALKMAN SYNC button another time returns to step 4.
8. Pressing the MENU/NO button displays "ERROR DP MODE" and exits the error history mode.
9. To exit the test mode, press the REPEAT/STEREO/MONO button.

ITEMS OF ERROR HISTORY MODE ITEMS AND CONTENTS

Selecting the Test Mode

Display	Details of History
total rec	Displays the recording time. Displayed as "r□□□□□□h". The displayed time is the total time the laser is set to the high power state. This is about 1/4 of the actual recording time. The time is displayed in decimal digits from 0h to 65535h.
total play	Displays the play time. Displayed as "p□□□□□□h". The time displayed is the total actual play time. Pauses are not counted. The time is displayed in decimal digits from 0h to 65535h.
retry err	Displays the total number of retries during recording and number of retry errors during play. Displayed as "r□□ p□□". "r" indicates the retries during recording while "p" indicates the retry errors during play. The number of retries and retry errors are displayed in hexadecimal digits from 00 to FF.
total err	Displays the total number of errors. Displayed as "total □□". The number of errors is displayed in hexadecimal digits from 00 to FF.
err history	Displays the 10 latest errors. Displayed as "0□ E@@". □ indicates the history number. The smaller the number, the more recent is the error. (00 is the latest). @@ indicates the error code. Refer to the following table for the details. The error history can be switched by rotating the AMS dial.
er refresh	Mode which erases the "retry err", "total err", and "err history" histories. When returning the unit to the customer after completing repairs, perform this to erase the past error history, After pressing the MD WALKMAN SYNC button and "er refresh?" is displayed, press the ENTER/YES button to erase the history. "Complete!" will be displayed momentarily. Be sure to check the following when this mode has been executed. • The data has been erased. • The mechanism operates normally when recording and play are performed.
tm refresh	Mode which erases the "total rec" and "total play" histories. These histories serve as approximate indications of when to replace the optical pickup. If the optical pickup has been replaced, perform this operation and erase the history. After pressing the ENTER/AMS button and "tm refresh?" is displayed, press the MD WALKMAN SYNC button to erase the history. "Complete!" will be displayed momentarily. Be sure to check the following when this mode has been executed. • The data has been erased. • The mechanism operates normally when recording and play are performed.

Table of Error Codes

Error Code	Details of Error	Error Code	Details of Error
E00	No error	E05	FOK has deviated
E01	Read error. PTOC cannot be read (DISC ejected)	E06	Cannot focus (Servo has deviated)
		E07	Recording retry
E02	TOC error. UTOC error (DISC not ejected)	E08	Recording retry error
		E09	Playback retry error (Access error)
E03	Loading error		
E04	Address cannot be read (Servo has deviated)	E0A	Play retry error (C2 error)

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.

This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

CAUTION : INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.
ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSAETTELSE FOR STRÅLING.
VORSICHT : UNSICHTBARE LASERSTRAHLUNG. WENN ABDECKUNG GEÖFFNET UND SICHEREITSVERRIEGELUNG ÜBERBRÜCKT. NICHT DEM STRAHL AUSSETZEN.
VARO! : AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING : OSYNLING LASERSTRÅLING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.
ADVERSEL : USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES. UNNGÅ EKSPONERING FOR STRÅLEN.
VIGYAZAT! : A BURKOLAT NYITÁSAKOR LÁTHATATLAN LÉZERSUGÁRVESZÉLY! KERÜLJE A BESUGÁRZÁST!

This caution label is located inside the unit.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

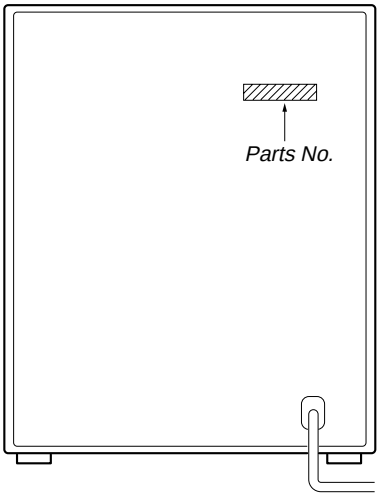
Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of soldering iron around 270˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

MODEL IDENTIFICATION — BACK PANEL —



PARTS No.	MODEL
4-216-211-0☐	AEP, UK, G, CIS
4-216-211-1☐	E, SP, MY, HK, AR
4-216-211-2☐	US, CND, KR, AUS

- Abbreviation
  CND : Canadian model
  G : German model
  SP : Singapore model
  MY : Malaysia model
  HK : Hong Kong model
  AR : Argentine model
  KR : Korea model
  AUS : Australian model

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE

The AC leakage from any exposed metal part to earth Ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

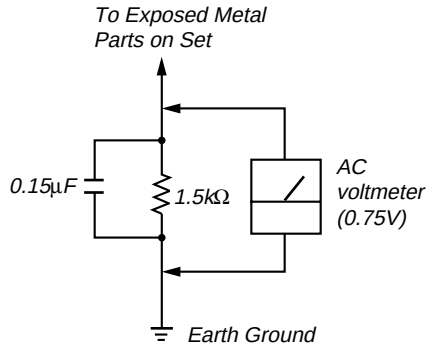


Fig. A. Using an AC voltmeter to check AC leakage.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

LASER DIODE AND FOCUS SEARCH OPERATION CHECK

Carry out the "S curve check" in "CD section adjustment" and check that the S curve waveform is output four times.

TABLE OF CONTENTS

1. SERVICING NOTE 8

2. GENERAL 14

3. DISASSEMBLY

3-1. Loading Panel 16
3-2. MD Mechanism and Front Panel 16
3-3. Cassette Lid and Tape Mechanism 17
3-4. MD Link, Power SW, CD Panel Boards and Display Board 17
3-5. Disc Tray 18
3-6. Slider (CAM) 18
3-7. Base Unit (MBU-5A) and BD (MD) Board 19
3-8. SW Board and Loading Motor (M103) 19

4. SERVICE MODE 20

5. TEST MODE (MD) 22

6. MECHANICAL ADJUSTMENTS 26

7. ELECTRICAL ADJUSTMENTS 27

8. DIAGRAMS

8-1. Circuit Boards Location 40
8-2. Block Diagrams
- BD (CD) Section 41
- BD (MD) Section (1) 43
- BD (MD) Section (2) 45
- Main Section 47
- Deck Section 49
- Display Section 51
- Main Power/Sub Power Section 53

8-3. Printed Wiring Board – BD (CD) Section – 57
8-4. Schematic Diagram – BD (CD) Section – 59
8-5. Printed Wiring Board – BD (MD) Section – 61
8-6. Schematic Diagram – BD (MD) (1/2) Section – 63
8-7. Schematic Diagram – BD (MD) (2/2) Section – 65
8-8. Schematic Diagram – Main (1/4) Section – 67
8-9. Schematic Diagram – Main (2/4) Section – 69
8-10. Schematic Diagram – Main (3/4) Section – 71
8-11. Schematic Diagram – Main (4/4) Section – 73
8-12. Printed Wiring Board – Main Section – 75
8-13. Printed Wiring Board – Deck Section – 77
8-14. Schematic Diagram – Deck Section – 79
8-15. Printed Wiring Board – Leaf SW Section – 81
8-16. Schematic Diagram – Leaf SW Section – 81
8-17. Schematic Diagram – Display (1/2) Section – 83
8-18. Schematic Diagram – Display (2/2) Section – 85
8-19. Printed Wiring Board – Display Section – 87
8-20. Printed Wiring Board – MD Digital Section – 89
8-21. Schematic Diagram – MD Digital (1/2) Section – 91
8-22. PSchematic Diagram – MD Digital (2/2) Section – 93
8-23. Schematic Diagram – BD Switch Section – 95
8-24. Printed Wiring Board – BD Switch Section – 96
8-25. Printed Wiring Board – CD Motor Section – 97
8-26. Schematic Diagram – CD Motor Section – 99
8-27. Printed Wiring Board – MD Link Section – 101
8-28. Schematic Diagram – MD Link Section – 103
8-29. Schematic Diagram – Power Section – 105
8-30. Printed Wiring Board – Power Section – 107
8-31. IC Block Diagrams 109
8-32. IC Pin Functions 112

9. EXPLODED VIEWS

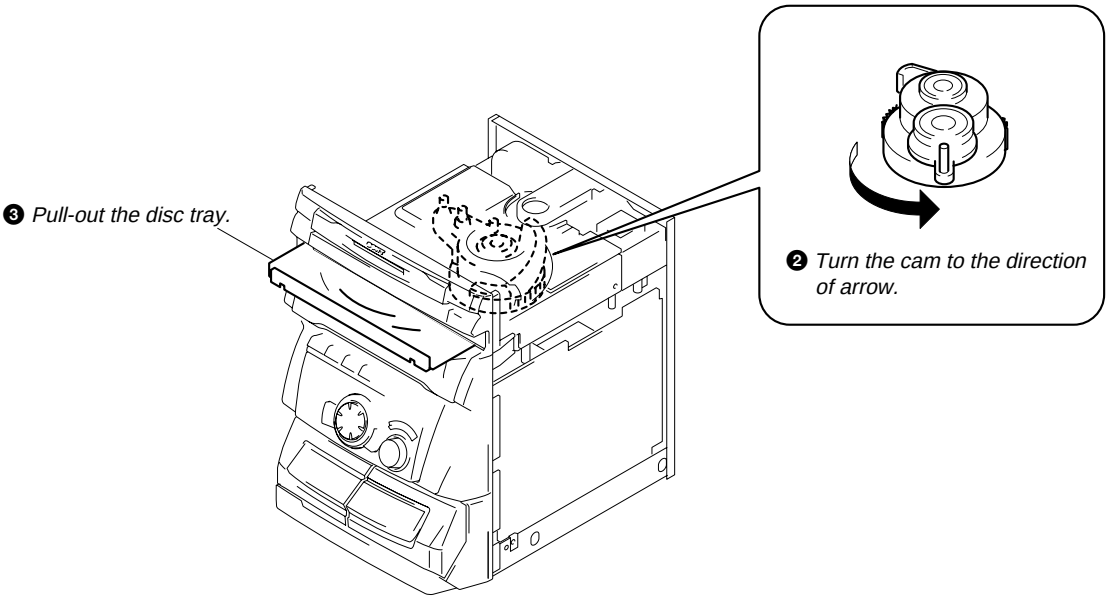
9-1. Case Section 119
9-2. Chassis Section 120
9-3. Front Panel Section 121
9-4. CD Mechanism Deck Section-1 (CDM38LH-5BD32L) .. 122
9-5. CD Mechanism Deck Section-2 (CDM38LH-5BD32L) .. 123
9-6. Base Unit Section (BU-5BD32L) 124
9-7. TC Mechanism Section-1 (TCM230AWR2/230PWR2) .. 125
9-8. TC Mechanism Section-2 (TCM230AWR2/230PWR2) .. 126
9-9. MD Mechanism Section-1 (MDM-5A) 127
9-10. MD Mechanism Section-2 (MDM-5A) 128

10. ELECTRICAL PARTS LIST 129

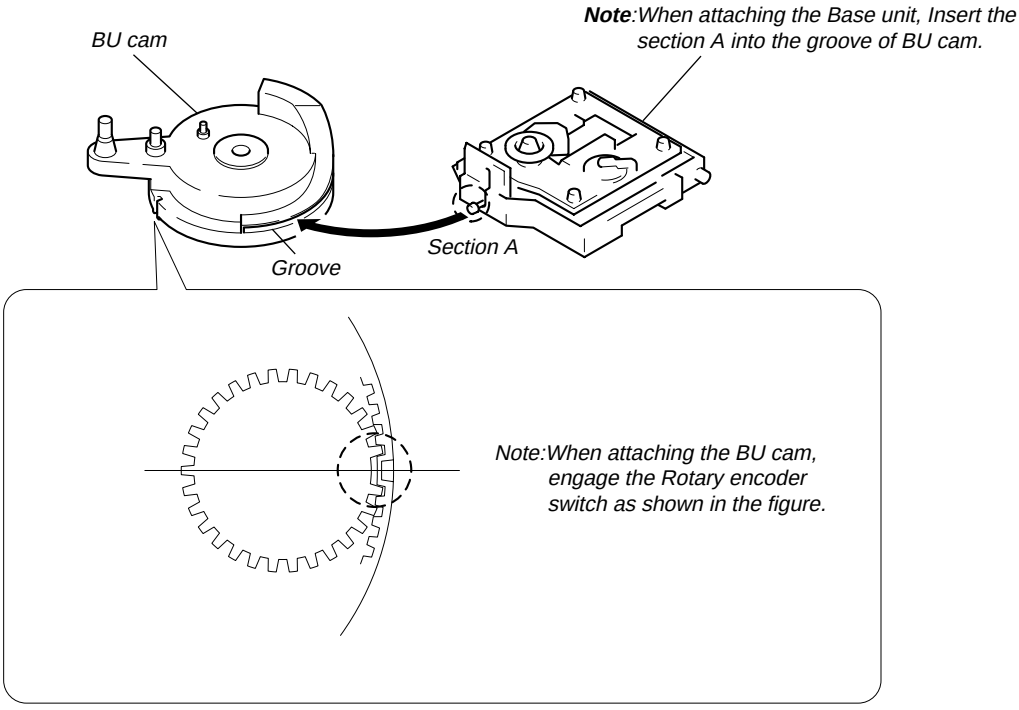
SECTION 1
SERVICING NOTE

HOW TO OPEN THE DISC TRAY WHEN POWER SWITCH TURNS OFF

❶ *Remove the Case.*



NOTE FOR INSTALLATION (ROTARY ENCODER)


BU cam
Note:When attaching the Base unit, Insert the section A into the groove of BU cam.
Groove
Section A
Note:When attaching the BU cam, engage the Rotary encoder switch as shown in the figure.

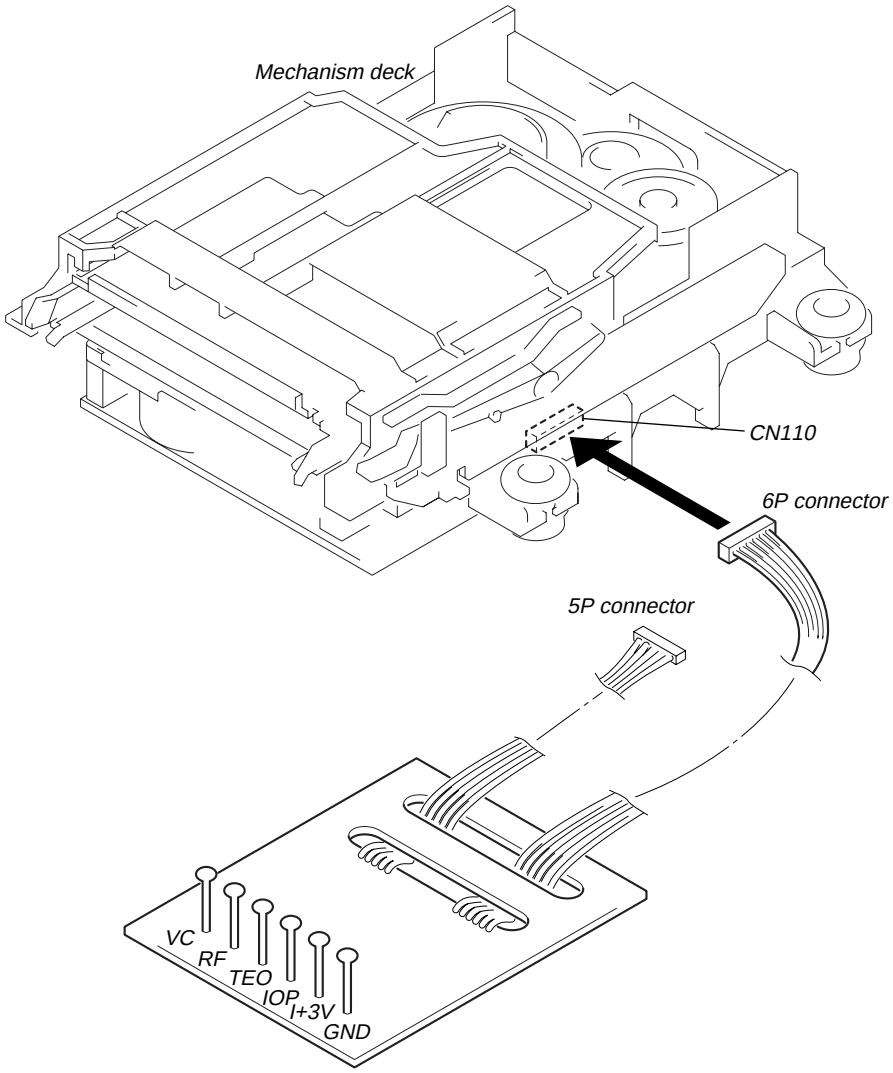
CD-TEXT

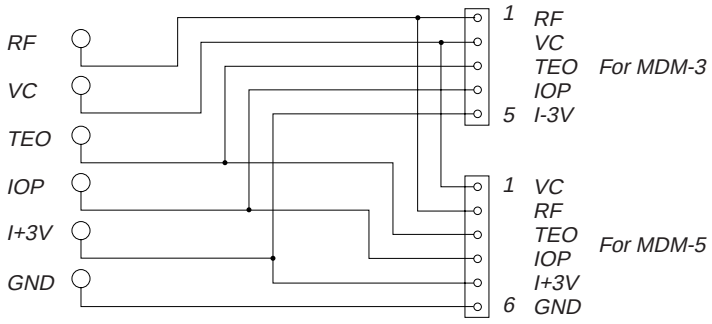
This unit is provided with a simple CD-TEXT display function.
The CD-TEXT contents of 50 tracks are displayed on the fluorescent display tube.
Since the function is simple, some special characters may not be displayed, or may be displayed as other characters.

JIG FOR CHECKING BD BOARD WAVEFORM

The special jig (J-2501-149-A) is useful for checking the waveform of the BD board. The names of terminals and the checking items to be performed are shown as follows.

GND : Ground
I+3V : For measuring IOP (Check the deterioration of the optical pick-up laser)
IOP : For measuring IOP (Check the deterioration of the optical pick-up laser)
TEO : TRK error signal (Traverse adjustment)
VC : Reference level for checking the signal
RF : RF signal (Check jitter)





IOP DATA RECORDING AND DISPLAY WHEN OPTICAL PICK-UP AND NON-VOLATILE MEMORY (IC171 OF BD BOARD) ARE REPLACED

The IOP value labeled on the optical pick-up can be recorded in the non-volatile memory. By recording the value, it will eliminate the need to look at the value on the label of the optical pick-up. When replacing the optical pick-up or non-volatile memory (IC171 of BD board), record the IOP value on the optical pick-up according to the following procedure.

Record Precedure:

1. With the power ON, press the CD-MD SYNC button while pressing the ■ and ENTER/YES buttons together.
2. Rotate the AMS dial to display “Service”, and press the ENTER/YES button.
3. Rotate the AMS dial to display “lop.Write”, and press the ENTER/YES button.
4. The display becomes “Ref=@@@.@” (@ is an arbitrary number) and the numbers which can be changed will blink.
5. Input the IOP value written on the optical pick-up.
   To select the number : Rotate the AMS dial.
   To select the digit : Press the MD WALKMAN SYNC button.
6. When the ENTER/YES button is pressed, the display becomes “Measu=@@@.@” (@ is an arbitrary number).
7. As the adjustment results are recorded for the 6 value. Leave it as it is and press the ENTER/YES button.
8. “Complete!” will be displayed momentarily. The value will be recorded in the non-volatile memory and the display will become “Iop Write”.
9. Press the REPEAT/STEREO/MONO button to complete.

Display Precedure:

1. With the power ON, press the CD-MD SYNC button while pressing the ■ and ENTER/YES buttons together.
2. Rotate the AMS dial to display “Service”, and press the YES button.
3. Rotate the AMS dial to display “lop.Read”.
4. “@@.@/##.#” is displayed and the recorded contents are displayed.
   @@.@ : indicates the Iop value labeled on the pick-up.
   ##.# : indicates the Iop value after adjustment
5. To end, press the MD WALKMAN SYNC button or MENU/NO button to display “Iop Read”. Then press the REPEAT/STEREO/MONO button.

CHECKS PRIOR TO PARTS REPLACEMENT AND ADJUSTMENTS

Before performing repairs, perform the following checks to determine the faulty locations up to a certain extent.
Details of the procedures are described in "5 Electrical Adjustments".

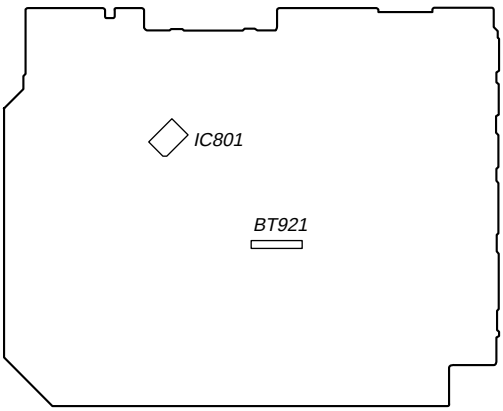
	Criteria for Determination (Unsatisfactory if specified value is not satisfied)	Measure if unsatisfactory:
Laser power check (7-6-2 : See page 29)	• 0.9 mW power Specified value : 0.84 to 0.92 mW • 7.0 mW power Specified value : 6.8 to 7.2 mW	• Clean the optical pick-up • Adjust again • Replace the optical pick-up
	lop (at 7mW) • Labeled on the optical pickup Iop value ± 10mA	• Replace the optical pick-up
Traverse check (7-6-3 : See page 29)	• Traverse waveform Specified value : Below 10% offset	• Replace the optical pick-up
Focus bias check (7-6-4 : See page 30)	• Error rate check Specified value : For points a, b, and c C1 error : Below 220 AD error : Below 2	• Replace the optical pick-up
C PLAY check (7-6-5 : See page 30)	• Error rate check Specified value: a. When using test disc (MDW-74/AU-1) C1 error : Below 80 AD error : Below 2 b. When using check disc (TDYS-1) C1 error : Below 50	• Replace the optical pick-up
Self-recording/playback check (REC/PLAY) (7-6-6 : See page 30)	• CPLAY error rate check Specified value: C1 error : Below 80 AD error : Below 2	If always unsatisfactory: • Replace the overwrite head • Check for disconnection of the circuits around the overwrite head
		If occasionally unsatisfactory: • Check if the overwrite head is distorted • Check the mechanism around the sled
TEMP check (Temperature compensation offset check) (7-6-1 : See page 29)	• Unsatisfactory if displayed as T=@@ (##) NG" NG (@@, ## are both arbitrary numbers)	• Check for disconnection of the circuits around D101 (BD board) • Check the signals around IC101, IC121, CN102, CN103 (BD board)

Note:
The criteria for determination above is intended merely to determine if satisfactory or not, and does not serve as the specified value for adjustments.
When performing adjustments, use the specified values for adjustments.

FORCED RESET

The system microprocessor can be reset in the following procedure.
Use these procedure when the unit cannot be operated normally due to the overrunning of the microprocessor, etc.
Procedure :
Disconnect the power plug, short-circuit both edge of BT921.

[MAIN BOARD] (Component Side)



RETRY CAUSE DISPLAY MODE

- In this test mode, the causes for retry of the unit during recording can be displayed on the fluorescent indicator tube. During playback, the "track mode" for obtaining track information will be set.
  This is useful for locating the faulty part of the unit.
- The following will be displayed :
  During recording and stop : Retry cause, number of retries, and number of retry errors.
  During playback : Information such as type of disc played, part played, copyright.
  These are displayed in hexadecimal.

Precedure:

1. Load a recordable disc whose contents can be erased into the unit.
2. Press the [FUNCTION] button and set the function to "MD".
3. Press the [MENU/NO] button. When "Edit/Menu" is displayed on the fluorescent indicator tube, rotate the [AMS] dial to display "All Erase?".
4. Press the [ENTER/YES] button.
5. "All Erase??" is displayed on the fluorescent indicator tube.
6. Press the [ENTER/YES] button to display "Complete!!", and press the [■] button immediately. Wait for about 10 seconds while pressing the button.
7. When the "TOC" displayed on the fluorescent display tube goes off, release the [■] button.
8. Press the [REC (MD)] button to start recording. Then press the [►II/MD] button and start recording.
9. To check the "track mode", press the [►II/MD] button to start play.
10. To exit the test mode, press the [I/⏻] button, and turn OFF the power. When "TOC" disappears, disconnect the power plug from the outlet. If the test mode cannot be exited, refer to "Forced Reset" on page 8.

Fig. 1 Reading the Test Mode Display (During recording and stop)

[RTs@@c##c**]
Fluorescent display tube display

@@ : Cause of retry
: Number of retries
** : Number of retry errors

Fig. 2 Reading the Test Mode Display (During playback)

[@@####**$$]
Fluorescent display tube display

@@ : Parts No. (name of area named on TOC)
: Cluster
** : Sector } Address (Physical address on disc)
$$: Track mode (Track information such as copyright information of each part)

Reading the Retry Cause Display

	Higher Bits				Lower Bits				Hexa-decimal	Cause of Retry	Occurring conditions
Hexadecimal	8	4	2	1	8	4	2	1			
Bit	b7	b6	b5	b4	b3	b2	b1	b0			
Binary	0	0	0	0	0	0	0	1	01	shock	When track jump (shock) is detected
	0	0	0	0	0	0	1	0	02	ader5	When ADER was counted more than five times continuously
	0	0	0	0	0	1	0	0	04	Discontinuous address	When ADIP address is not continuous
	0	0	0	0	1	0	0	0	08	DIN unlock	When DIN unlock is detected
	0	0	0	1	0	0	0	0	10	FCS incorrect	When not in focus
	0	0	1	0	0	0	0	0	20	IVR rec error	When ABCD signal level exceeds the specified range
	0	1	0	0	0	0	0	0	40	CLV unlock	When CLV is unlocked
	1	0	0	0	0	0	0	0	80	Access fault	When access operation is not performed normally

Reading the Display:
Convert the hexadecimal display into binary display. If more than two causes, they will be added.

Example
When 42 is displayed:
Higher bit : 4 = 0100 ⟶ b6
Lower bit : 2 = 0010 ⟶ b1
In this case, the retry cause is combined of "CLV unlock" and "ader5".

When A2 is displayed:
Higher bit : A = 1010 ⟶ b7+b5
Lower bit : 2 = 0010 ⟶ b2
The retry cause in this case is combined of "access fault", "IVR rec error", and "ader5".

Reading the Track Mode Display

	Higher Bits				Lower Bits				Hexa-decimal	Details	
Hexadecimal	8	4	2	1	8	4	2	1			
Bit	b7	b6	b5	b4	b3	b2	b1	b0		When 0	When 1
Binary	0	0	0	0	0	0	0	1	01	Emphasis OFF	Emphasis ON
	0	0	0	0	0	0	1	0	02	Monaural	Stereo
	0	0	0	0	0	1	0	0	04	This is 2-bit display. Normally 01.	
	0	0	0	0	1	0	0	0	08	01:Normal audio. Others:Invalid	
	0	0	0	1	0	0	0	0	10	Audio (Normal)	Invalid
	0	0	1	0	0	0	0	0	20	Original	Digital copy
	0	1	0	0	0	0	0	0	40	Copyright	No copyright
	1	0	0	0	0	0	0	0	80	Write prohibited	Write allowed

Reading the Display:
Convert the hexadecimal display into binary display. If more than two causes, they will be added.

Example When 84 is displayed:
Higher bit : 8 = 1000 ⟶ b7
Lower bit : 4 = 0100 ⟶ b2
In this case, as b2 and b7 are 1 and others are 0, it can be determined that the retry cause is combined of “emphasis OFF”, “monaural”, “original”, “copyright exists”, and “write allowed”.

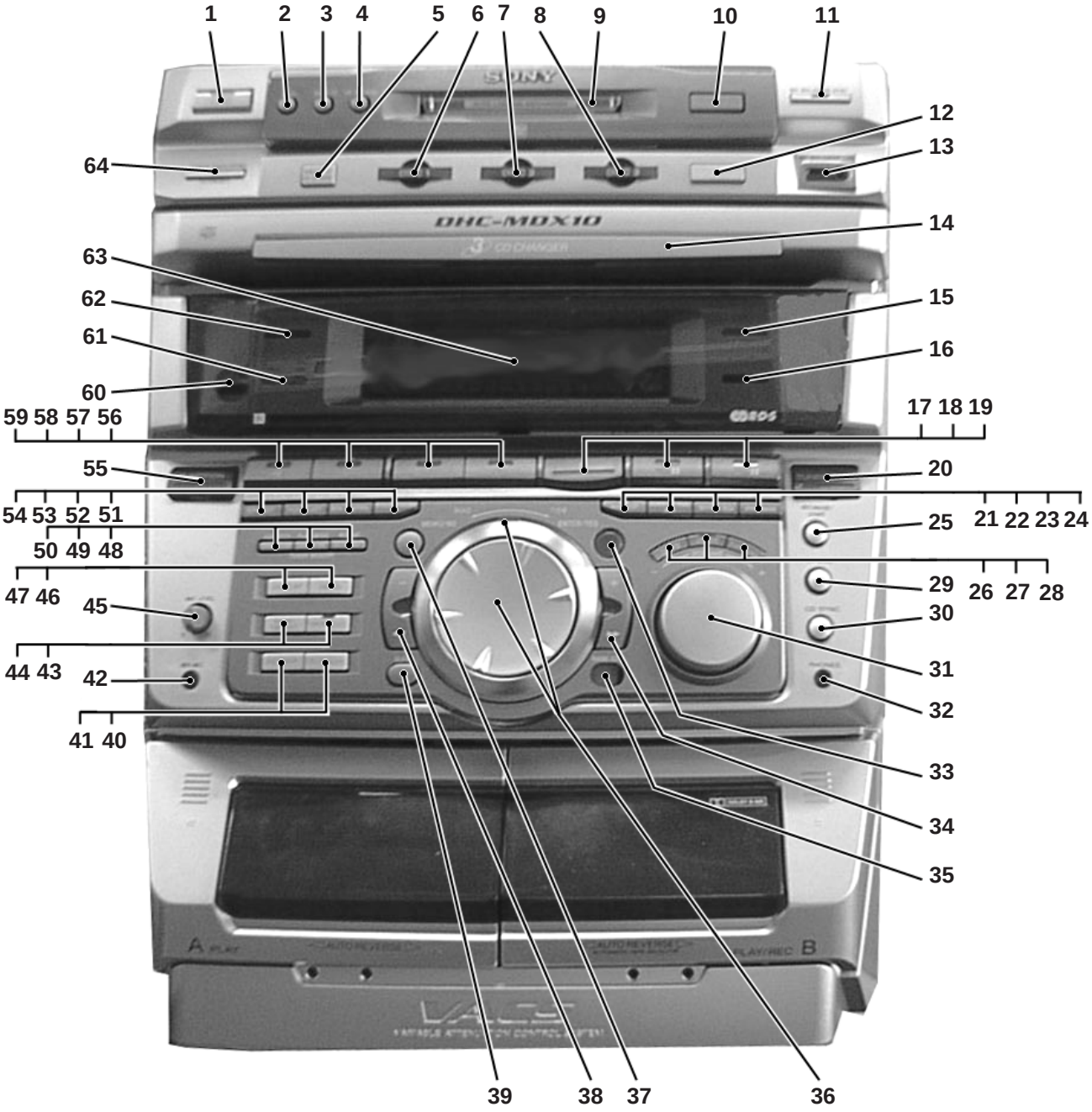
Example When 07 is displayed:
Higher bit : 0 = 1000 ⟶ All 0
Lower bit : 7 = 0111 ⟶ b0+b1+b2
In this case, as b0, b1, and b2 are 1 and others are 0, it can be determined that the retry cause is combined of “emphasis ON”, “stereo”, “original”, “copyright exists”, and “write prohibited”.

Hexadecimal ⟶ Binary Conversion Table

Hexadecimal	Binary	Hexadecimal	Binary
0	0000	8	1000
1	0001	9	1001
2	0010	A	1010
3	0011	B	1011
4	0100	C	1100
5	0101	D	1101
6	0110	E	1110
7	0111	F	1111

SECTION 2
GENERAL

Front Panel



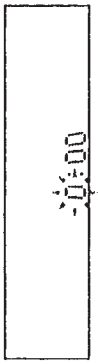
LOCATION OF PARTS AND CONTROLS

1 I/⏻ (POWER) button and indicator
2 REC button and indicator
3 REC IT button
4 CD-MD SYNC button
5 DISC SKIP/EX-CHANGE button
6 DISC 1 button and indicator
7 DISC 2 button and indicator
8 DISC 3 button and indicator
9 Disk compartment
10 ⏏ (Eject) (MD) button
11 MD WALKMAN SYNC button
12 ⏏ (Eject) (CD) button
13 MD WALKMAN LINK jack
14 Disc tray
15 SYNC BASS HIGH indicator
16 SYNC BASS LOW indicator
17 ■ button
18 ►II/CD button and indicator
19 ►II/MD button and indicator
20 TUNER/BAND button and indicator
21 CD NON-STOP button and indicator
22 KARAOKE PON/MPX button
23 SYNC EQ button
24 SYNC BASS button
25 REC PAUSE/START button and indicator
26 DBFB button
27 GROOVE button
28 SURROND button
29 HI DUB button
30 CD-TAPE SYNC button
31 VOLUME knob
32 PHONES jack
33 ENTER/YES button and indicator
34 ►► + button and indicator
35 NAME EDIT/CHAR button
36 JOG/◄◄ ►► dial and indicator
37 MENU/NO button
38 ►► – button and indicator
39 CLEAR button
40 CD FLASH button
41 CD LOOP button
42 MIX MIC jack
43 TIMER SELECT button and indicator
44 CLOCK/TIMER SET button
45 MIC LEVEL knob
46 SPECTRUM ANALYZER button
47 DISPLAY button
48 REPEAT STEREO/MONO button
49 DOLBY NR/PLAY MODE/PTY button
50 DIRECTION/EDIT/TUNER MEMORY button
51 P FILE MEMORY button
52 GEQ CONTROL button
53 FILE SELECT button
54 EFFECT button
55 FUNCTION button and indicator
56 ◄/TAPE B button and indicator
57 ►/TAPE B button and indicator
58 ◄/TAPE A button and indicator
59 ►/TAPE A button and indicator
60 Remote sensor
61 SYNC EQ indicator
62 EFFECT indicator
63 Display Window
64 POWER SAVE/DEMO (STANDBY) button

This section is extracted from instruction manual.

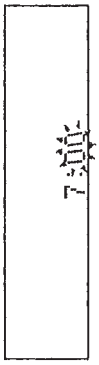
Step 2: Setting the time (continued)

1 Press CLOCK/TIMER SET.
The hour indication flashes.



2 Turn the jog dial to set the hour.

3 Press ENTER/YES.
The minute indication flashes.



4 Turn the jog dial to set the minute.

5 Press ENTER/YES.
The clock starts working.

Tip
If you've made a mistake, start over from step 1.

To change the time
The previous explanation shows you how to set the time while the power is off. To change the time while the power is on, do the following:
1 Press CLOCK/TIMER SET.
2 Turn the jog dial to select SET CLOCK.
3 Press ENTER/YES.
4 Perform steps 2 through 5 above.

Tips
- The demonstration disappears when you set the time. To activate the demonstration, press DISPLAY while the system is off.
- The clock appears in the display while the system is power off. When the system is in the power saving mode, the clock indication disappears.

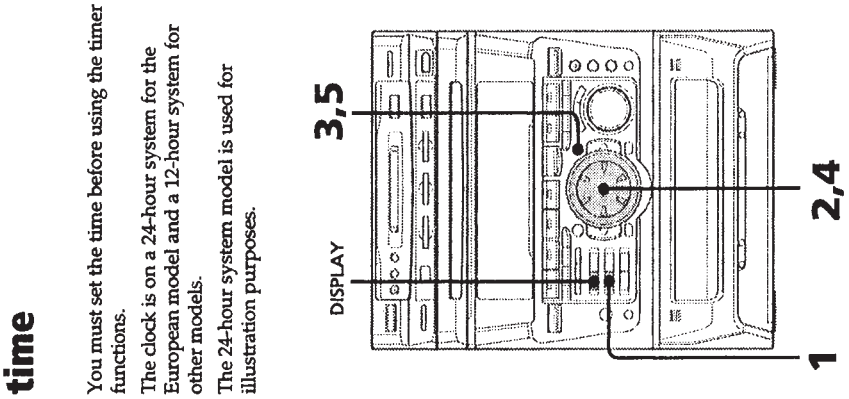
Note
The clock settings are canceled when you disconnect the power cord or if a power failure occurs.

Step 2: Setting the time

You must set the time before using the timer functions.

The clock is on a 24-hour system for the European model and a 12-hour system for other models.

The 24-hour system model is used for illustration purposes.

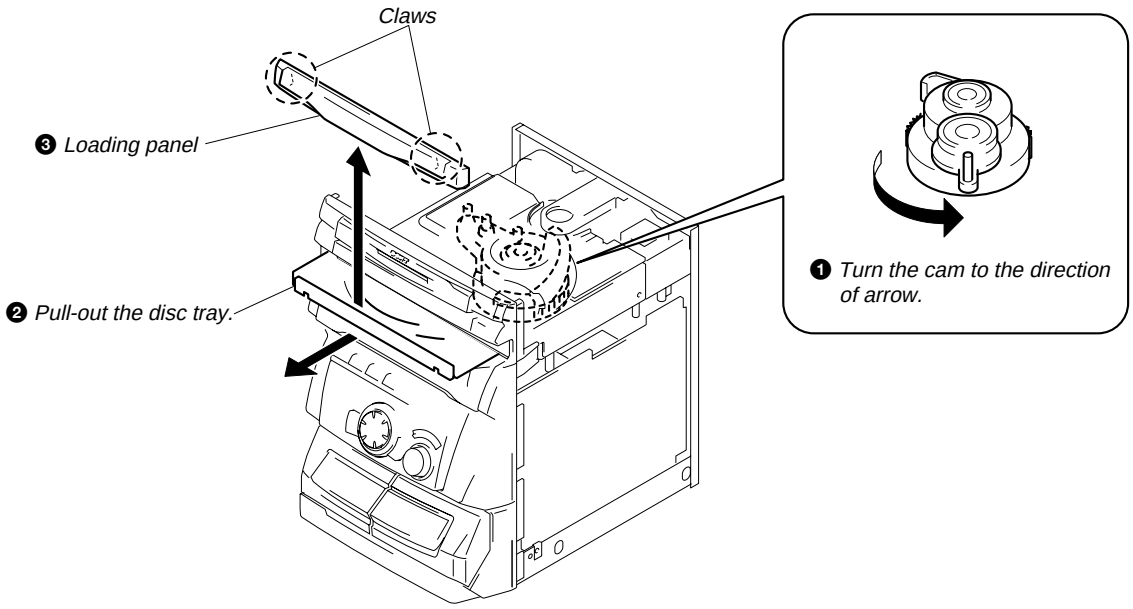


7 8

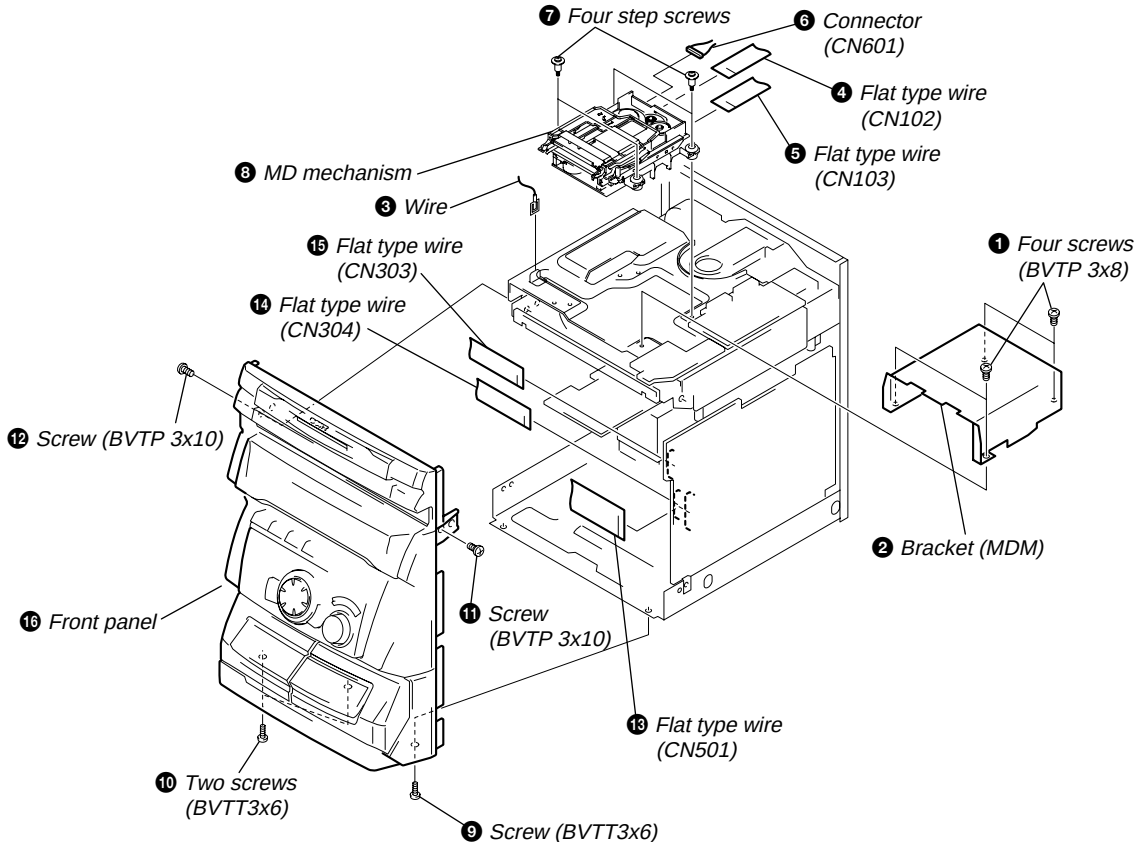
SECTION 3
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

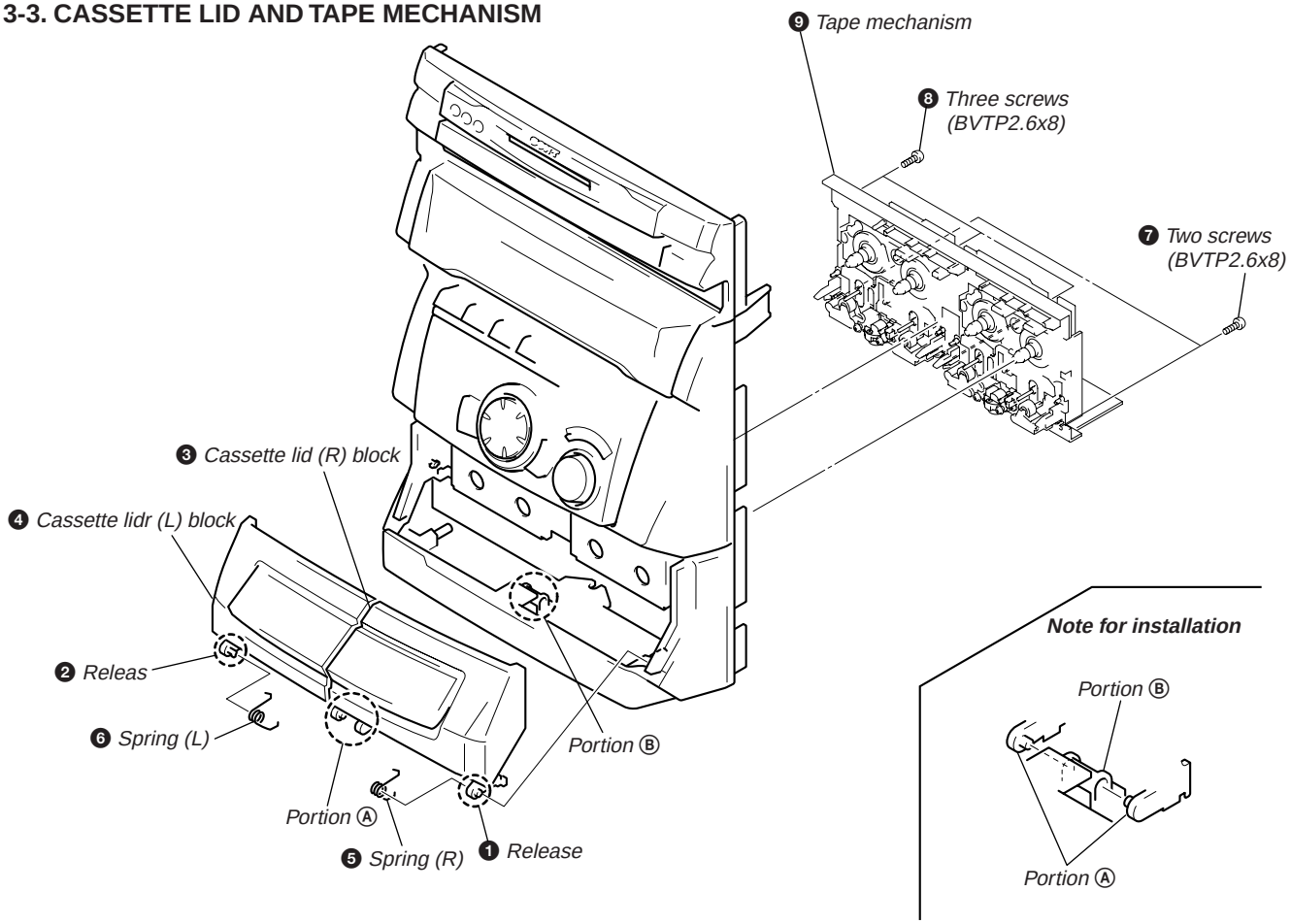
3-1. LOADING PANEL



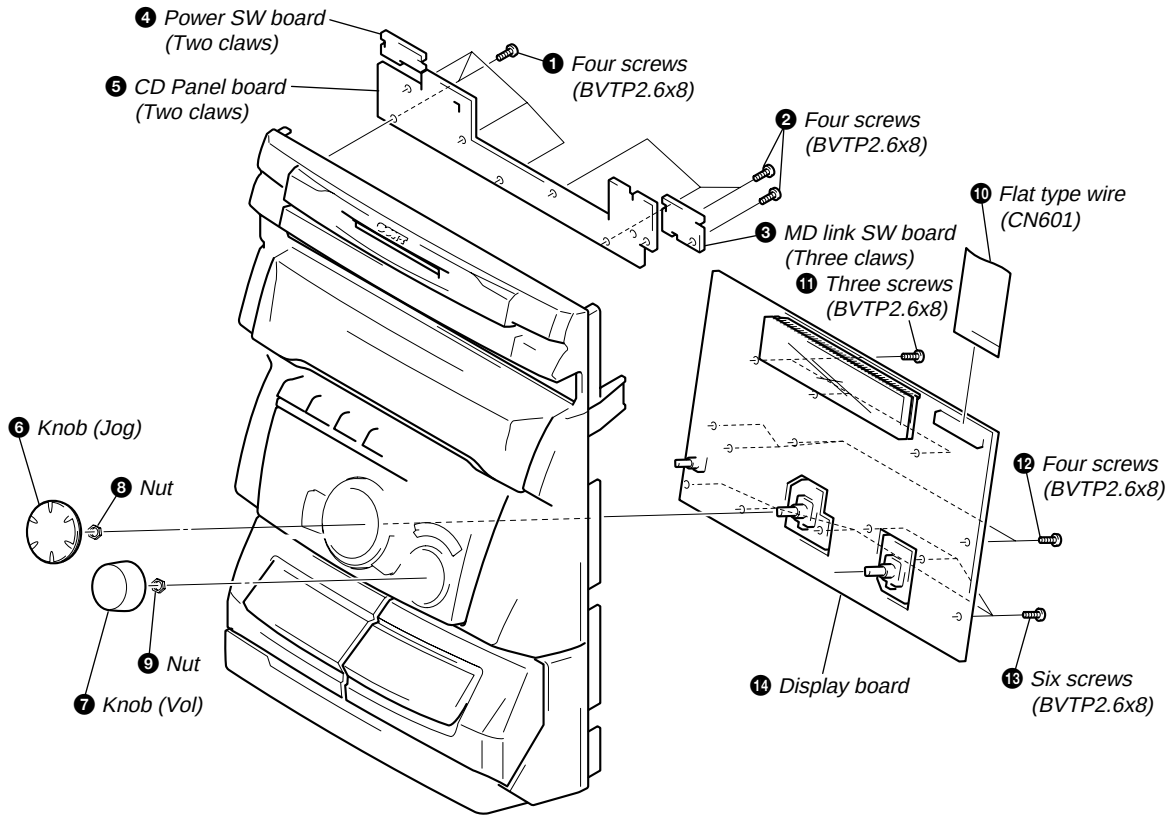
3-2. MD MECHANISM AND FRONT PANEL



3-3. CASSETTE LID AND TAPE MECHANISM



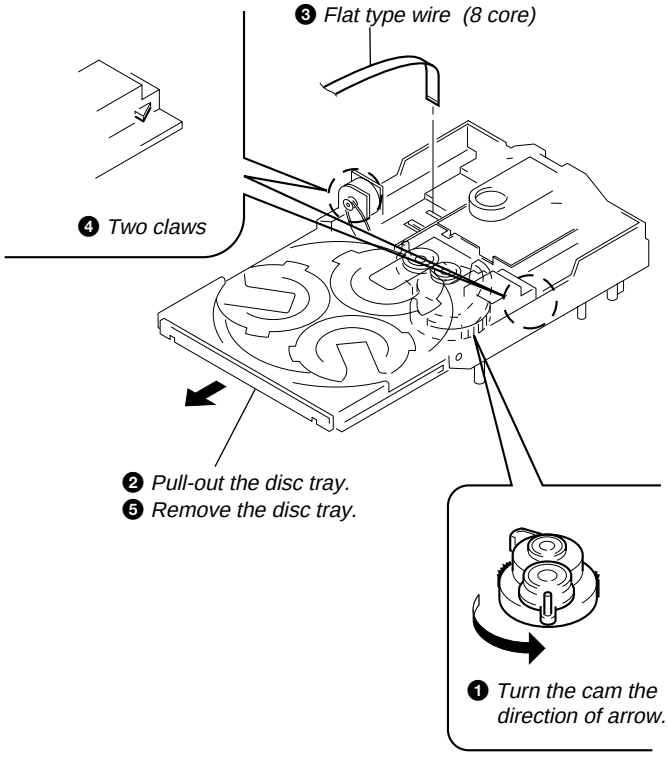
3-4. MD LINK, POWER SW, CD PANEL BOARDS AND DISPLAY BOARD

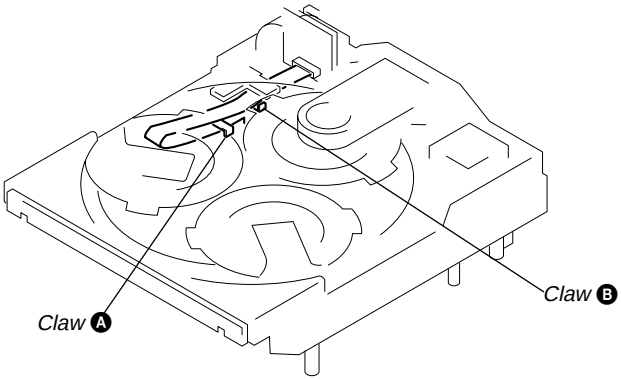

❹ Power SW board (Two claws)
❺ CD Panel board (Two claws)
❶ Four screws (BVTP2.6x8)
❷ Four screws (BVTP2.6x8)
❿ Flat type wire (CN601)
❸ MD link SW board (Three claws)
⓫ Three screws (BVTP2.6x8)
❻ Knob (Jog)
❽ Nut
⓬ Four screws (BVTP2.6x8)
❾ Nut
❼ Knob (Vol)
⓮ Display board
⓭ Six screws (BVTP2.6x8)

3-5. DISC TRAY

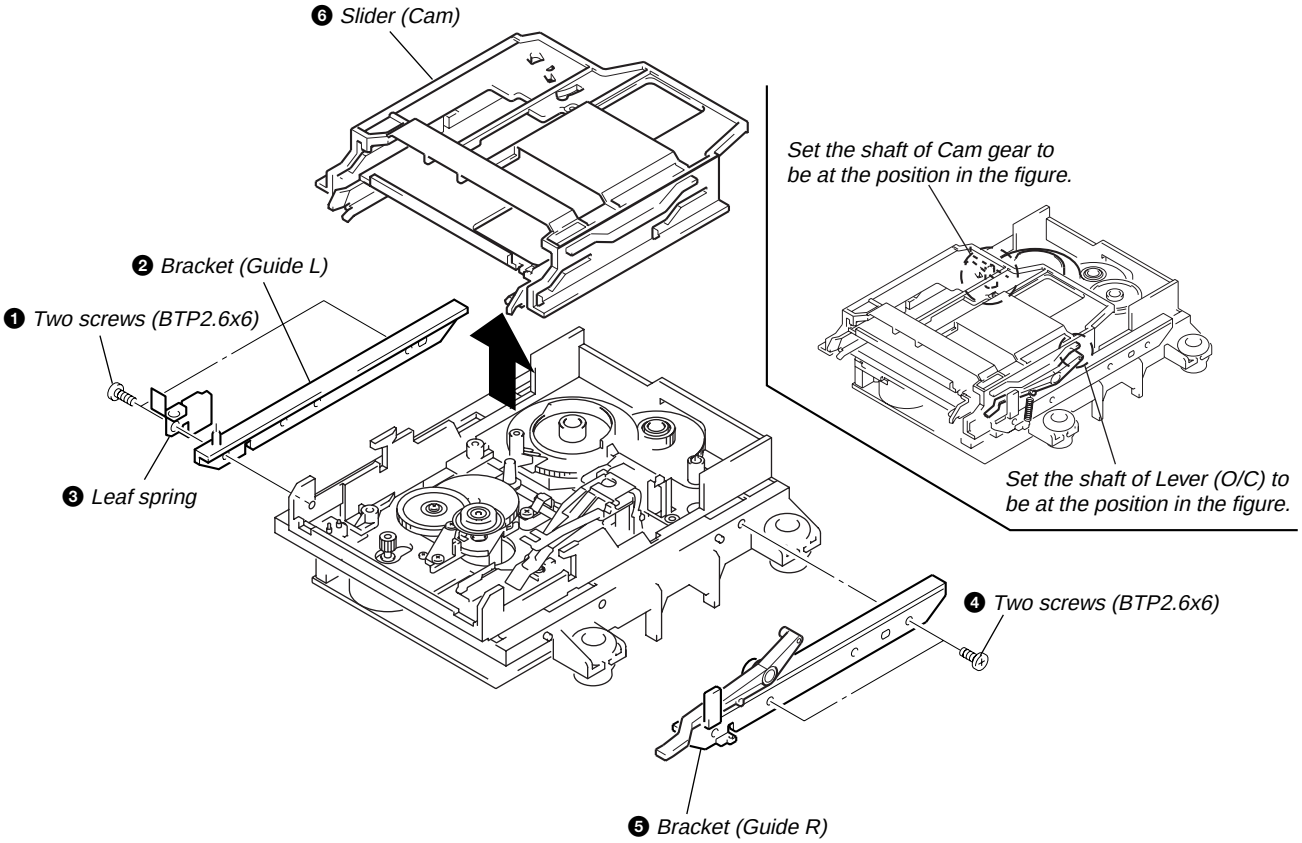
(Perform after removing the front panel.)

Note:*When installing the Disc tray, pull around the flat type wire to pass through the claw* Ⓐ *and claw* Ⓑ*, as shown in the figure.*

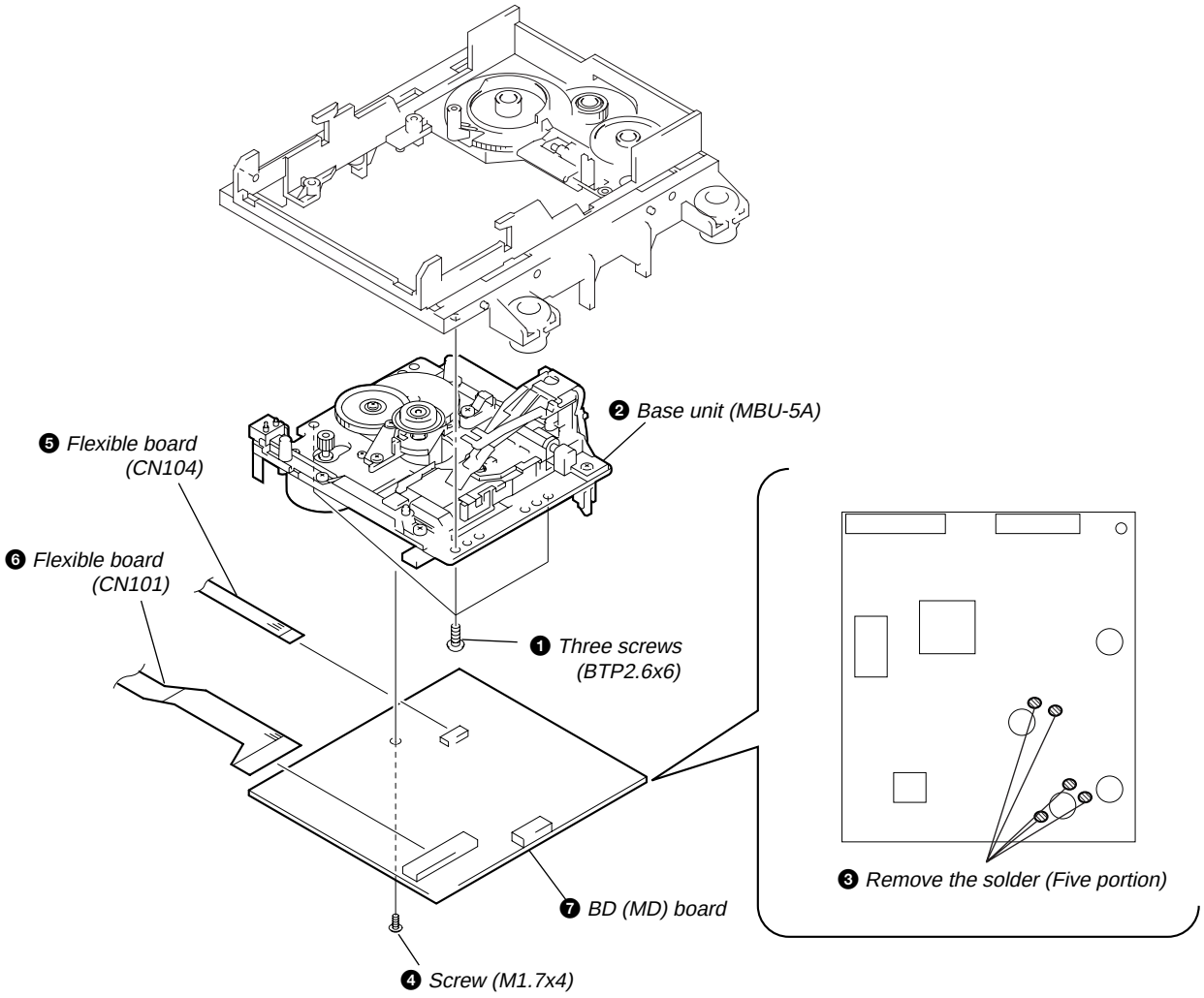




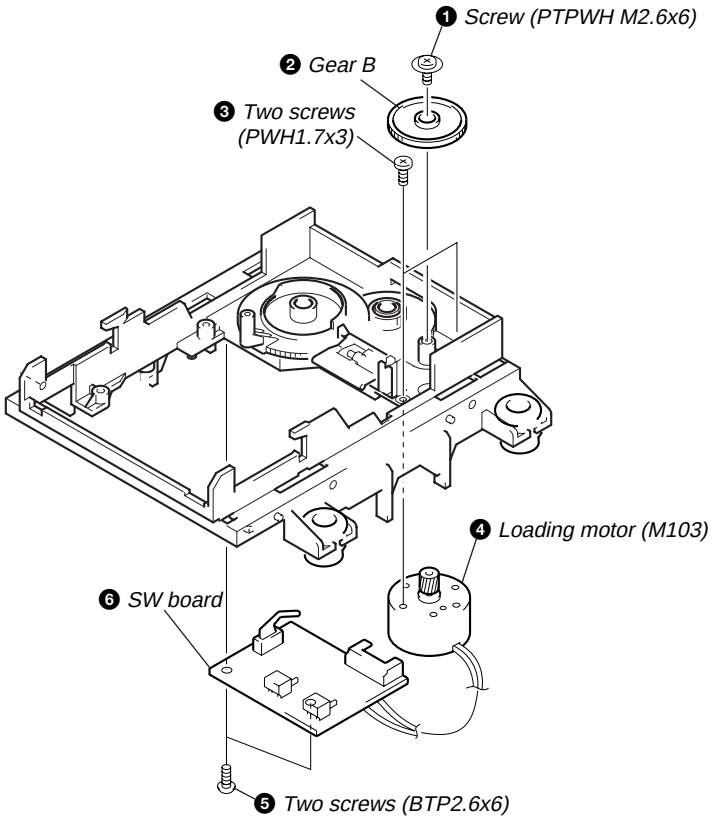
3-6. SLIDER (CAM)


❻ Slider (Cam)
❷ Bracket (Guide L)
❶ Two screws (BTP2.6x6)
❸ Leaf spring
Set the shaft of Cam gear to be at the position in the figure.
Set the shaft of Lever (O/C) to be at the position in the figure.
❹ Two screws (BTP2.6x6)
❺ Bracket (Guide R)

3-7. BASE UNIT (MBU-5A) AND BD (MD) BOARD


❷ Base unit (MBU-5A)
❺ Flexible board (CN104)
❻ Flexible board (CN101)
❶ Three screws (BTP2.6x6)
❸ Remove the solder (Five portion)
❼ BD (MD) board
❹ Screw (M1.7x4)

3-8. SW BOARD AND LOADING MOTOR (M103)



SECTION 4
SERVICE MODE

MC Cold Reset

• The cold reset clears all data including preset data stored in the RAM to initial conditions. Execute this mode when returning the set to the customer.

Procedure:

1. Press three buttons [■] , [ENTER/YES] , and [I/⏻] simultaneously.
2. "COLD RESET" is displayed on the fluorescent display tube and reset is executed.

CD Delivery Mode

• This mode moves the optical pick-up to the position durable to vibration. Use this mode when returning the set to the customer after repair.

Procedure:

1. Press [I/⏻] button to turn the set ON.
2. Press [CD LOOP] button and [I/⏻] button simultaneously.
3. A message "LOCK" is displayed on the fluorescent indicator tube, and the CD delivery mode is set.

MC Hot Reset

• This mode resets the set with the preset data kept stored in the memory. The hot reset mode functions same as if the power cord is plugged in and out.

Procedure:

1. Press three buttons [■] , [ENTER/YES] , and [DISC 1] simultaneously.
2. The fluorescent indicator tube becomes blank instantaneously, and the set is reset.

Sled Servo Mode

• This mode can run the CD sled motor freely. Use this mode, for instance, when cleaning the pick-up.

Procedure:

1. Press [I/⏻] button to turn the set ON.
2. Press three buttons [■] , [ENTER/YES] , and [⏏ (CD)] simultaneously.
3. The Sled Servo mode is selected, if "CD" is blanking on the fluorescent indicator tube.
4. With the CD in stop status, When the [⏮ AMS ⏭] knob is rotated in the clockwise direction, the optical pick-up moves outside. When rotated counterclockwise, it moves inside.
5. To exit from this mode, perform as follows:
   1) Move the optical pick-up to the most inside track.
   2) Execute MC cold reset. (Press the three buttons [■] , [ENTER/YES] , and [I/⏻] button simultaneously.)

Note:

• Always move the pick-up to most inside track when exiting from this mode. Otherwise, a disc will not be unloaded.
• Do not run the sled motor excessively, otherwise the gear can be chipped.

Change-over of AM Tuner Step between 9kHz and 10kHz

• A step of AM channels can be changed over between 9kHz and 10kHz.

Procedure:

1. Press [I/⏻] button to turn the set ON.
2. Select the function "TUNER", and press [TUNER/BAND] button to select the BAND "AM".
3. Press [I/⏻] button to turn the set OFF.
4. Press [ENTER/YES] and [I/⏻] buttons simultaneously, and the display of fluorescent indicator tube changes to "AM 9k STEP" or "AM 10k STEP", and thus the channel step is changed over.

LED and Fluorescent Indicator Tube All Lit, Key Check Mode

Procedure:

1. Press three buttons [■] , [ENTER/YES] , and [DISC 2] simultaneously.
2. LEDs and fluorescent indicator tube are all turned on.
   Press [DISC 2] button, and the key check mode is activated.
3. In the key check mode, the fluorescent indicator tube displays "K 0 V0 J0". Each time a button is pressed, "K"value increases. However, once a button is pressed, it is no longer taken into account.
   "J" Value increases like 1, 2, 3 ... if rotating [⏮ AMS ⏭] knob in "+" direction, or it decreases like 0, 9, 8 ... if rotating in "-" direction.
   "V" Value increases like 1, 2, 3 ... if rotating [VOLUME] knob in "+" direction, or it decreases like 0, 9, 8 ... if rotating in "-" direction.
4. To exit from this mode, press three buttons in the same manner as step 1, or disconnect the power cord.

AMS Test Mode

• This mode is used for checking the AMS operations of the tape deck.

JIG

7-819-039-12 Alignment tape, AMS-110A

Procedure:

1. Press the I/⏻ button to turn the unit ON.
2. Set the tape (AMS-110A).
3. Press the three buttons ■ , ENTER/YES , and DISC 3 button simultaneously.
4. "TEST MODE" is displayed on the fluorescent display tube.
5. Press the FUNCTION button and switch the function to the deck with the tape (AMS-110A).
6. Press the CD SYNC button. "AMS CHECK" is displayed on the fluorescent display tube and the tape is rewound.
7. AMS starts in the normal direction. If the AMS count is 2 at shut down, proceed to step 8.
   "NG" is displayed at other times, and the deck stops.
8. AMS starts in the opposite direction. If the AMS count is 2 at shut down again, "OK" is displayed.
   "NG" is displayed at other times.

Note: The ■ button of CD section will become effective and the aging of CD section will stop sometime, if the buttons described in step 3 are not pressed simultaneously. In that case, press ▶II/CD button and operate the CD section.

SECTION 5
TEST MODE (MD)

5-1. PRECAUTIONS FOR USE OF TEST MODE

- As loading related operations will be performed regardless of the test mode operations being performed, be sure to check that the disc is stopped before setting and removing it.
  Even if the [⏏EJECT (MD)] button is pressed while the disc is rotating during continuous playback, continuous recording, etc., the disc will not stop rotating.
  Therefore, it will be ejected while rotating.
  Be sure to press the [⏏EJECT (MD)] button after pressing the [MENU/NO] button and the rotation of disc is stopped.

5-1-1. Recording laser emission mode and operating buttons

- Continuous recording mode (CREC MODE)
- Laser power check mode (LDPWR CHECK)
- Laser power adjustment mode (LDPWR ADJUST)
- Traverse (MO) check (EF MO CHECK)
- Traverse (MO) adjustment (EF MO ADJUST)
- When pressing the [REC (MD)] button.

5-2. SETTING THE TEST MODE

The following are two methods of entering the test mode.

Procedure 1: With the power ON, press the [CD-MD SYNC] button while pressing the [■] and [ENTER/YES] buttons together.
When the test mode is set, "Check" will be displayed. Rotating the [AMS] dial switches between the following four groups;
‥ ⟷ Check ⟷ Adjust ⟷ Service ⟷ Develop ⟷ ⋯.

Procedure 2: With the power ON, press the [REC (MD)] button while pressing the [■] and [ENTER/YES] buttons together.
When the test mode is set, "TEMP CHECK" will be displayed. By setting the test mode using this procedure, only the "Check" group of procedure 1 can be executed.

5-3. EXITING THE TEST MODE

Press the [REPEAT/STEREO/MONO] button.

5-4. BASIC OPERATIONS OF THE TEST MODE

All operations are performed using the [AMS] dial, [ENTER/YES] button, and [MENU/NO] button.
The functions of these buttons are as follows.

Function name	Function
AMS dial	Changes parameters and modes
ENTER/YES button	Proceeds onto the next step. Finalizes input.
MENU/NO button	Returns to previous step. Stops operations.

5-5. SELECTING THE TEST MODE

There are 31 types of test modes as shown below. The groups can be switched by rotating the AMS dial. After selecting the group to be used, press the MD WALKMAN SYNC button. After setting a certain group, rotating the AMS dial switches between these modes.
Refer to "Group" in the table for details selected.
All items used for servicing can be treated using group S. So be carefully not to enter other groups by mistake.

Display	Contents	Mark	Group (∗)
TEMP CHECK	Temperature compensation offset check		C S
LDPWR CHECK	Laser power check		C S
EF MO CHECK	Traverse (MO) check		C S
EF CD CHECK	Traverse (CD) check		C S
FBIAS CHECK	Focus bias check		C S
S curve CHECK	S letter check	(X)	C
VERIFY MODE	Non-volatile memory check	(X)	C
DETRK CHECK	Detrack check	(X)	C
TEMP ADJUST	Temperature compensation offset adjustment		A S
LDPWR ADJUST	Laser power adjustment		A S
EF MO ADJUST	Traverse (MO) adjustment		A S
EF CD ADJUST	Traverse (CD) adjustment		A S
FBIAS ADJUST	Focus bias adjustment		A S
EEP MODE	Non-volatile memory control	(X) (!)	D
MANUAL CMD	Command transmission	(X)	D
SVDATA READ	Status display	(X)	D
ERR DP MODE	Error history display, clear		S
SLED MOVE	Sled check	(X)	D
ACCESS MODE	Access check	(X)	D
0920 CHECK	Outermost circumference check	(X)	D
HEAD ADJUST	Head position check	(X)	D
CPLAY2 MODE	Same functions as CPLAY MODE	(X)	D
CREC2 MODE	Same functions as CREC MODE	(X)	D
ADJ CLEAR	Initialization of non-volatile memory of adjustment value		A S
AG Set (MO)	Auto gain output level adjustment (MO)		A S
AG Set (CD)	Auto gain output level adjustment (CD)		A S
Iop Read	IOP data display		C S
Iop Write	IOP data write		A S
INFORMATION	Microprocessing version display		C S
CPLAY MODE	Continuous play mode		C A S D
CREC MODE	Continuous recording mode		C A S D

Group (∗)
C: Check A: Adjust
S: Service D: Develop

- For details of each adjustment mode, refer to "5. Electrical Adjustments".
  For details of "ERR DP MODE", refer to "Self-Diagnosis Function" on page 3.
- If a different mode has been selected by mistake, press the MENU/NO button to exit that mode.
- Modes with (X) in the Mark column are not used for servicing and therefore are not described in detail. If these modes are set accidentally, press the MENU/NO button to exit the mode immediately. Be especially careful not to set the modes with (!) as they will overwrite the non-volatile memory and reset it, and as a result, the unit will not operate normally.

5-5-1. Operating the Continuous Playback Mode

1. Entering the continuous playback mode
   ① Set the disc in the unit. (Whichever recordable discs or discs for playback only are available.)
   ② Rotate the AMS dial and display “CPLAY MODE”.
   ③ Press the ENTER/YES button to change the display to “CPLAY MID”.
   ④ When access completes, the display changes to “C1 = □□□□ AD = □□”.
   Note : The numbers “□” displayed show you error rates and ADER.

2. Changing the parts to be played back
   ① Press the ENTER/YES button during continuous playback to change the display as below.
   “CPLAY MID” → “CPLAY OUT” → “CPLAY IN” ┐
   ↑ ┘
   When pressed another time, the parts to be played back can be moved.
   ② When access completes, the display changes to “C1 = □□□□ AD = □□”.
   Note : The numbers “□” displayed show you error rates and ADER.
3. Ending the continuous playback mode
   ① Press the MENU/NO button. The display will change to “CPLAY MODE”.
   ② Press the ⏏EJECT (MD) button to remove the disc.
   Note : The playback start addresses for IN, MID, and OUT are as follows.
   IN 40h cluster
   MID 300h cluster
   OUT 700h cluster

5-5-2. Operating the Continuous Recording Mode (Use only when performing self-recording/palyback check.)

1. Entering the continuous recording mode
   ① Set a recordable disc in the unit.
   ② Rotate the AMS dial and display “CREC MODE”.
   ③ Press the ENTER/YES button to change the display to “CREC MID”.
   ④ When access completes, the display changes to “CREC (□□□□)” and “REC” indicator lights up.
   Note : The numbers “□” displayed shows you the recording position addresses.
2. Changing the parts to be recorded
   ① When the ENTER/YES button is pressed during continuous recording, the display changes as below.
   “CPLAY MID” → “CPLAY OUT” → “CPLAY IN” ┐
   ↑ ┘
   When pressed another time, the parts to be recorded can be changed. “REC” indicator goes off.
   ② When access completes, the display changes to “CREC (□□□□)” and “REC” indicator lights up.
   Note : The numbers “□” displayed shows you the recording position addresses.
3. Ending the continuous recording mode
   ① Press the MENU/NO button. The display changes to “CREC MODE” and “REC” indicator goes off.
   ② Press the ⏏EJECT (MD) button to remove the disc.
   Note 1 : The recording start addresses for IN, MID, and OUT are as follows.
   IN 40h cluster
   MID 300h cluster
   OUT 700h cluster
   Note 2 : The MENU/NO button can be used to stop recording anytime.
   Note 3 : Do not perform continuous recording for long periods of time above 5 minutes.
   Note 4 : During continuous recording, be careful not to apply vibration.

5-5-3. Non-Volatile Memory Mode (EEP MODE)

This mode reads and writes the contents of the non-volatile memory.
It is not used in servicing. If set accidentally, press the MENU/NO button immediately to exit it.

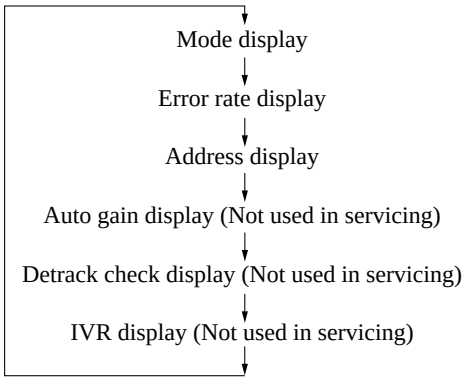
5-6. FUNCTIONS OF OTHER BUTTONS

Function	Contents
►II/MD	Sets continuous playback when pressed in the STOP state. When pressed during continuous playback, the tracking servo turns ON/OFF.
■	Stops continuous playback and continuous recording.
►► ∗	The sled moves to the outer circumference only when this is pressed.
◄◄ ∗	The sled moves to the inner circumference only when this is pressed.
CLEAR	Switches between the pit and groove modes when pressed.
PLAY MODE	Switches the spindle servo mode (CLV S ⟷ CLV A).
DISPLAY	Switches the displayed contents each time the button is pressed
⏏ EJECT (MD)	Ejects the disc
REPEAT/STEREO/MONO	Exits the test mode

∗ This function works only when the ■ button is pressed and "MD" is displayed. In other cases, it works everytime the ■ button is pressed.

5-7. TEST MODE DISPLAYS

Each time the DISPLAY button is pressed, the display changes in the following order.


Mode display
Error rate display
Address display
Auto gain display (Not used in servicing)
Detrack check display (Not used in servicing)
IVR display (Not used in servicing)

1. Mode display

Displays "TEMP ADJUST", "CPLAYMODE", etc.

2. Error rate display

Displays the error rate in the following way.

C1 = □□□□ AD = □□

C1 = Indicates the C1 error.

AD = Indicates ADER.

3. Address display

The address is displayed as follows. (MO:recordable disc, CD:playback only disc)

Pressing the CLEAR button switches between the groove display and pit display.

h = □□□□ s = □□□□ (MO pit and CD)

h = □□□□ a = □□□□ (MO groove)

h = Indicates the header address.

s = Indicates the SUBQ address.

a = Indicates the ADIP address.

Note: "–" is displayed when servo is not imposed.

4. Auto gain display (Not used in servicing)

The auto gain is displayed as follows.

AG = □□ / □□ □□

5. Detrack check display (Not used in servicing)

The detrack is displayed as follows.

ADR = □□□□□□□

6. IVR display (Not used in servicing)

The IVR is displayed as follows.

□□ □□ □□

MEANINGS OF OTHER DISPLAYS

Display	Contents	
	When Lit	When Off
►II/MD ∗	During continuous playback (CLV: ON) (Green)	STOP (CLV: OFF) (Light off)
►II/MD ∗	Tracking servo OFF (Unber)	Tracking servo ON (Green)
REC	Recording mode ON	Recording mode OFF
SYNC	CLV low speed mode	CLV normal mode
L-SYNC	ABCD adjustment completed	
OVER	Tracking offset cancel ON	Tracking offset cancel OFF
1	Tracking auto gain OK	
REPEAT	Focus auto gain OK	
TRACK	Pit	Groove
DISC	High reflection	Low reflection
SHUFFLE	CLV S	CLV A
MONO	CLV LOCK	CLV UNLOCK

∗ Differentiate ►II/MD by the color of the button indicator.

SECTION 6
MECHANICAL ADJUSTMENTS

Precaution

1. Clean the following parts with a denatured alcohol-moistened swab:
   record/playback heads — pinch rollers
   erase head — rubber belts
   capstan — idlers
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement

Mode	Torque meter	Meter reading
FWD	CQ-102C	31 to 71 g • cm (0.43 – 0.98 oz • inch)
FWD back tension	CQ-102C	2 to 6 g • cm (0.02 – 0.08 oz • inch)
REV	CQ-102RC	31 to 71 g • cm (0.43 – 0.98 oz • inch)
REV back tension	CQ-102RC	2 to 6 g • cm (0.02 – 0.08 oz • inch)
FF/REW	CQ-201B	71 to 143 g • cm (0.98 – 1.99 oz • inch)
FWD tension	CQ-403A	100 g or more (3.53 oz or more)
REV tension	CQ-403R	100 g or more (3.53 oz or more)

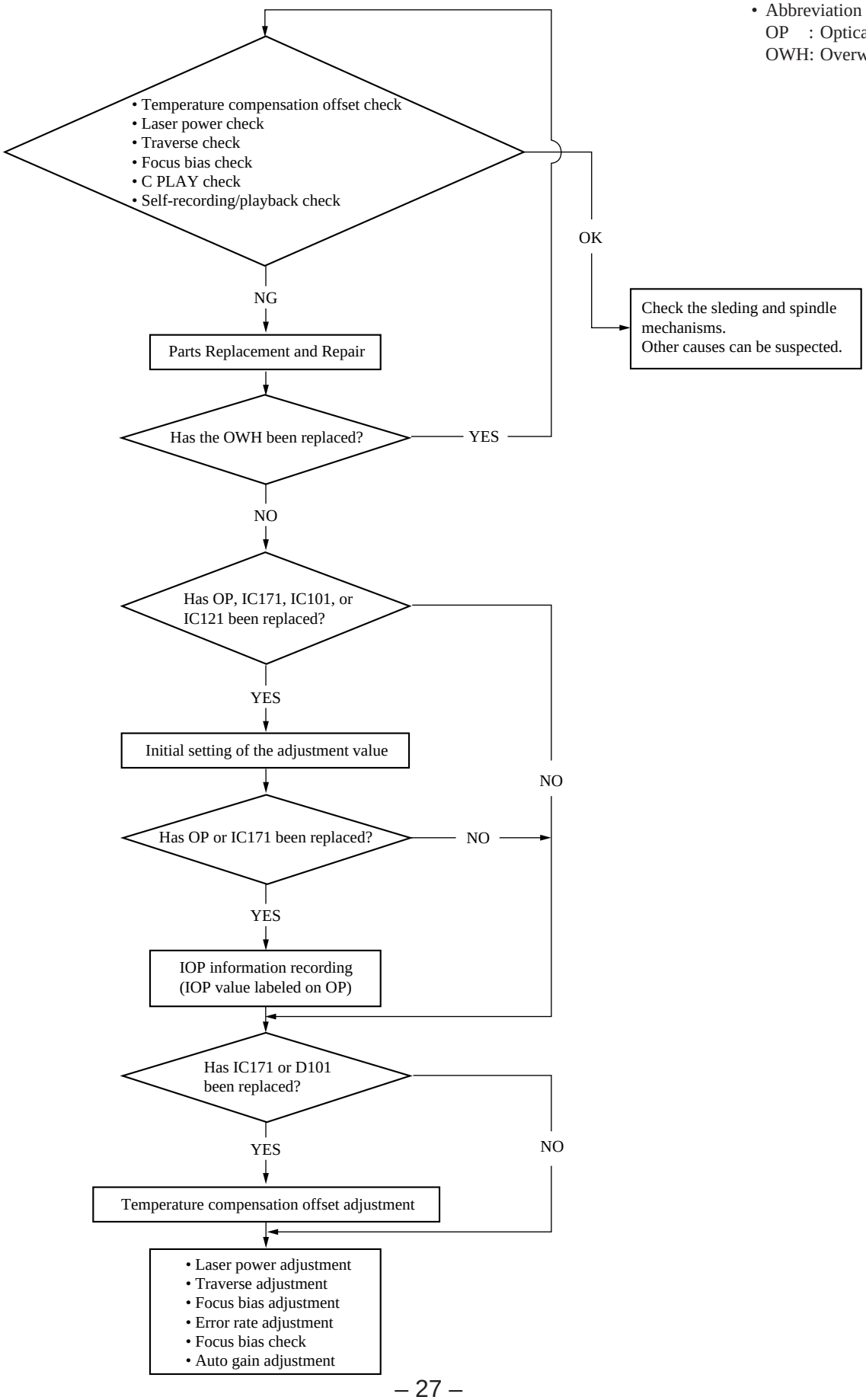
SECTION 7
ELECTRICAL ADJUSTMENTS

MD SECTION

7-1. PARTS REPLACEMENT AND ADJUSTMENT

- Check and adjust the MDM and MBU as follows.
  The procedure changes according to the part replaced

- Abbreviation
  OP : Optical pick-up
  OWH: Overwrite head

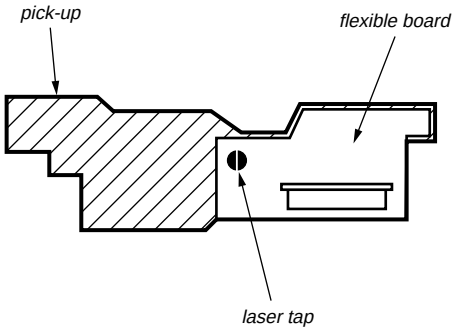


7-2. PRECAUTIONS FOR CHECKING LASER DIODE EMISSINON

To check the emission of the laser diode during adjustments, never view directly from the top as this may lose your eye-sight.

7-3. PRECAUTIONS FOR USE OF OPTICAL PICK-UP (KMS-260A)

As the laser diode in the optical pick-up is easily damaged by static electricity, solder the laser tap of the flexible board when using it. Before disconnecting the connector, desolder first. Before connecting the connector, be careful not to remove the solder. Also take adequate measures to prevent damage by static electricity. Handle the flexible board with care as it breaks easily.



Optical pick-up flexible board

7-4. PRECAUTIONS FOR ADJUSTMENTS

1) When replacing the following parts, perform the adjustments and checks with **O** in the order shown in the following table.

	Optical Pick-up	BD Board			
		IC171	D101	IC101, IC121	IC192
1. Initial setting of adjustment value	O	O	×	O	×
2. Recording of IOP information (Value written in the pick-up)	O	O	×	×	×
3. Temperature compensation offset adjustment	×	O	O	×	×
4. Laser power adjustment	O	O	×	O	O
5. Traverse adjustment	O	O	×	O	×
6. Focus bias adjustment	O	O	×	O	×
7. Error rate check	O	O	×	O	×
8. Auto gain output level adjustment	O	O	×	O	×

2) Set the test mode when performing adjustments.
   After completing the adjustments, exit the test mode.
   Perform the adjustments and checks in "group S" of the test mode.
3) Perform the adjustments to be needed in the order shown.
4) Use the following tools and measuring devices.
   - Check Disc (MD) TDYS-1
     (Parts No. 4-963-646-01)
   - Test Disk (MDW-74/AU-1) (Parts No. 8-892-341-41)
   - Laser power meter LPM-8001 (Parts No. J-2501-046-A)

   or
     MD Laser power meter 8010S (Parts No. J-2501-145-A)
   - Oscilloscope (Measure after performing CAL of prove.)
   - Digital voltmeter
   - Thermometer
   - Jig for checking BD board waveform
     (Parts No. : J-2501-149-A)
5) When observing several signals on the oscilloscope, etc., make sure that VC and ground do not connect inside the oscilloscope.
   (VC and ground will become short-circuited.)
6) Using the above jig enables the waveform to be checked without the need to solder.
   (Refer to Servicing Note on page 9.)
7) As the disc used will affect the adjustment results, make sure that no dusts nor fingerprints are attached to it.

Note:
When performing laser power checks and adjustment (electrical adjustment), use of the new MD laser power meter 8010S (J-2501-145-A) instead of the conventional laser power meter is convenient. It sharply reduces the time and trouble to set the laser power meter sensor onto the objective lens of the optical pick-up.

7-5. CREATING CONTINUOUSLY RECORDED DISC

* This disc is used in focus bias adjustment and error rate check.
  The following describes how to create a continuous recording disc.

1. Insert a disc (blank disc) commercially available.
2. Rotate the AMS dial and display "CREC MODE".
3. Press the ENTER/YES button again to display "CREC MID". Display "CREC (0300)" and start to recording.
4. Complete recording within 5 minutes.
5. Press the MENU/NO button and stop recording .
6. Press the ⏏EJECT (MD) button and remove the disc.

The above has been how to create a continuous recorded data for the focus bias adjustment and error rate check.

Note :

- Be careful not to apply vibration during continuous recording.

7-6. CHECKS PRIOR TO REPAIRS

These checks are performed before replacing parts according to "approximate specifications" to determine the faulty locations. For details, refer to "Checks Prior to Parts Replacement and Adjustments" (See page 11).

7-6-1. Temperature Compensation Offset Check

When performing adjustments, set the internal temperature and room temperature to 22 to 28°C.

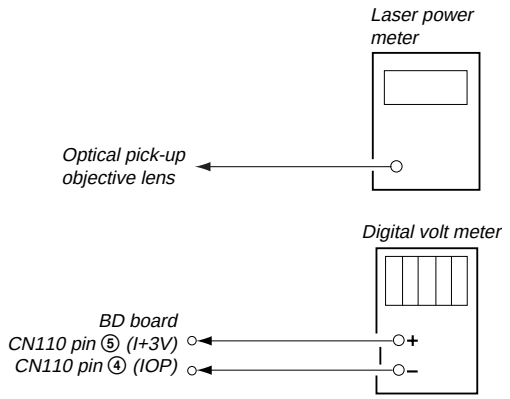
Checking Procedure:

1. Rotate the AMS dial to display "TEMP CHECK".
2. Press the ENTER/YES button.
3. "T=@@(##) OK" should be displayed. If "T=@@ (##) NG" is displayed, it means that the results are bad.
   (@@ indicates the current value set, and ## indicates the value written in the non-volatile memory.)

7-6-2. Laser Power Check

Before checking, check the IOP value of the optical pick-up. (Refer to 7-8. Recording and Displaying IOP Information.)

Connection :



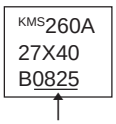
Checking Procedure:

1. Set the laser power meter on the objective lens of the optical pick-up. (When it cannot be set properly, press the ■ button and display the "MD", and then press the ◀◀ button or ▶▶ button to move the optical pick-up.)
   Connect the digital volt meter to CN110 pin ⑤ (I+3V) and CN110 pin ④ (IOP).
2. Then, rotate the AMS dial and display "LDPWR CHECK" (C02).
3. Press the ENTER/YES button once and display "LD 0.9 mW $ ⬚⬚". Check that the reading of the laser power meter become 0.84 to 0.92 mW.
4. Press the ENTER/YES button once more and display "LD 7.0 mW $ ⬚⬚". Check that the reading the laser power meter and digital volt meter satisfy the specified value.

Specified Value :

Laser power meter reading : 7.0 ± 0.2 mW
Digital voltmeter reading : Optical pick-up displayed value ± 10%

(Optical pick-up label)



(For details of the method for checking this value, refer to "7-8. Recording and Displaying IOP Information".)

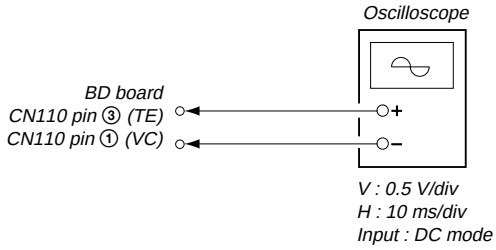
Iop = 82.5 mA in this case
Iop (mA) = Digital voltmeter reading (mV)/1 (Ω)

5. Press the MENU/NO button and display "LDPWR CHECK" and stop the laser emission.
   (The MENU/NO button is effective at all times to stop the laser emission.)

Note 1: After step 4, each time the ENTER/YES button is pressed, the display will be switched between "LD 0.7 mW $ ⬚⬚", "LD 6.2 mW $ ⬚⬚", and "LD WP $ ⬚⬚". Nothing needs to be performed here.

7-6-3. Traverse Check

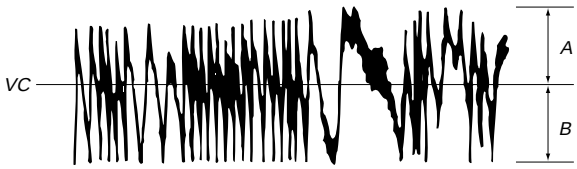
Connection :



Checking Procedure:

1. Connect an oscilloscope to CN110 pin ③ (TE) and CN110 pin ① (VC) of the BD board.
2. Load a disc (any available on the market). (Refer to Note 1.)
3. Press the ■ button and display the "MD", and then press the ▶▶ button and move the optical pick-up outside the pit.
4. Rotate the AMS dial and display "EF MO CHECK"(C03).
5. Press the ENTER/YES button and display "EFB = ⬚⬚ MO-R". (Laser power READ power/Focus servo ON/tracking servo OFF/ spindle (S) servo ON)
6. Observe the waveform of the oscilloscope, and check that the specified value is satisfied. Do not rotate the AMS dial. (Read power traverse checking)

(Traverse Waveform)

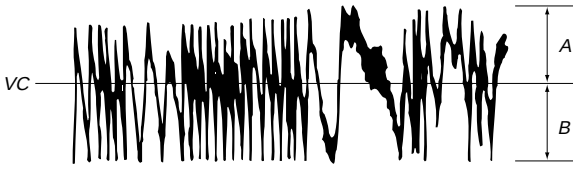


Specified value : Below 10% offset value

$$\text{Offset value (\%)} = \frac{|A - B|}{2\,(A + B)} \times 100$$

7. Press the ENTER/YES button and display "EFB = ⬚⬚ MO-W".
8. Observe the waveform of the oscilloscope, and check that the specified value is satisfied. Do not rotate the AMS dial. (Write power traverse checking)

(Traverse Waveform)



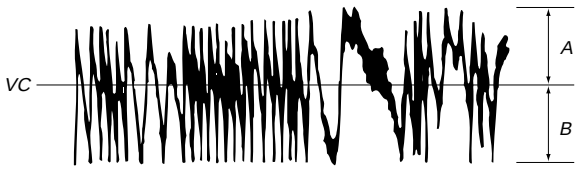
Specified value : Below 10% offset value

$$\text{Offset value (\%)} = \frac{|A - B|}{2\,(A + B)} \times 100$$

9. Press the ENTER/YES button display "EFB = ⬚⬚ MO-P". Then, the optical pick-up moves to the pit area automatically and servo is imposed.

10.Observe the waveform of the oscilloscope, and check that the specified value is satisfied. Do not rotate the AMS dial.

(Traverse Waveform)

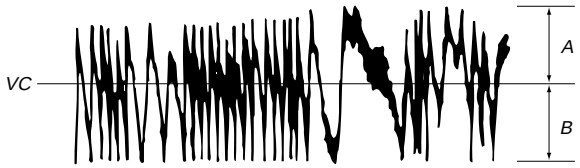


Specified value : Below 10% offset value

$$\text{Offset value (\%)} = \frac{|A - B|}{2\,(A + B)} \times 100$$

11. Press the ENTER/YES button display “EF MO CHECK” The disc stops rotating automatically.
12. Press the ⏏EJECT (MD) button and remove the disc.
13. Load the check disc (MD) TDYS-1.
14. Roteto the AMS dial and display “EF CD CHECK”.
15. Press the ENTER/YES button and display “EFB = □□ CD”. Servo is imposed automatically.
16. Observe the waveform of the oscilloscope, and check that the specified value is satisfied. Do not rotate the AMS dial.

(Traverse Waveform)



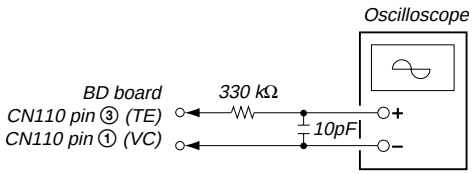
Specified value : Below 10% offset value

$$\text{Offset value (\%)} = \frac{|A - B|}{2\,(A + B)} \times 100$$

17. Press the ENTER/YES button and display “EF CD CHECK”.
18. Press the ⏏EJECT (MD) button and remove the check disc (MD) TDYS-1.

Note 1 : MO reading data will be erased during if a recorded disc is used in this adjustment.

Note 2 : If the traverse waveform is not clear, connect the oscilloscope as shown in the following figure so that it can be seen more clearly.



7-6-4. Focus Bias Check

Change the focus bias and check the focus tolerance amount.

Checking Procedure :

1. Load a test disk (MDW-74/AU-1).
2. Rotate the AMS dial and display “CPLAY MODE”.
3. Press the ENTER/YES button twice and display “CPLAY MID”.
4. Press the MENU/NO button when “C1 = □□□□ AD = □□” is displayed.
5. Rotate the AMS dial and display “FBIAS CHECK”.
6. Press the ENTER/YES button and display “ □□□□/□□ c = □□”. The first four digits indicate the C1 error rate, the two digits after “/” indicate ADER, and the 2 digits after “c =” indicate the focus bias value.
   Check that the C1 error is below 220 and ADER is below 2.
7. Press the ENTER/YES button and display “ □□□□/□□ b = □□”. Check that the C1 error is below 220 and ADER is below 2.
8. Press the ENTER/YES button and display “ □□□□/□□ a = □□”. Check that the C1 error is below 220 and ADER is below 2.
9. Press the MENU/NO button, next press the ⏏EJECT (MD) button, and remove the test disc.

7-6-5. C PLAY Checking

MO Error Rate Check

Checking Procedure :

1. Load a test disk (MDW-74/AU-1).
2. Rotate the AMS dial and display “CPLAY MODE”.
3. Press the ENTER/YES button and display “CPLAY MID”.
4. The display changes to “C1 = □□□□ AD = □□”.
5. If the C1 error rate is below 80, check that ADER is below 2.
6. Press the MENU/NO button, stop playback, press the ⏏EJECT (MD) button, and test disc.

CD Error Rate Check

Checking Procedure :

1. Load a check disc (MD) TDYS-1.
2. Rotate the AMS dial and display “CPLAY MODE”.
3. Press the ENTER/YES button twice and display “CPLAY MID”.
4. The display changes to “C = □□□□ AD = □□”.
5. Check that the C1 error rate is below 50.
6. Press the MENU/NO button, stop playback, press the ⏏EJECT (MD) button, and the test disc.

7-6-6. Self-Recording/playback Check

Prepare a continuous recording disc using the unit to be repaired and check the error rate.

Checking Procedure :

1. Insert a recordable disc (blank disc) into the unit.
2. Rotate the AMS dial to display “CREC MODE”.
3. Press the ENTER/YES button to display the “CREC MID”.
4. When recording starts, “REC” is displayed, this becomes “CREC (@@@@)" (@@@@) is the address), and recording starts.
5. About 1 minute later, press the MENU/NO button to stop continuous recording.
6. Rotate the AMS dial to display “C PLAY MODE”.
7. Press the ENTER/YES button to display “C PLAY MID”.
8. “C1 = □□□□ AD = □□” will be displayed.
9. Check that the C1 error becomes below 80 and the AD error below 2.
10. Press the MENU/NO button to stop playback, and press the ⏏EJECT (MD) button and remove the disc.

7-7. INITIAL SETTING OF ADJUSTMENT VALUE

Note:
Mode which sets the adjustment results recorded in the non-volatile memory to the initial setting value. However the results of the temperature compensation offset adjustment will not change to the initial setting value.
If initial setting is performed, perform all adjustments again excluding the temperature compensation offset adjustment.
For details of the initial setting, refer to "7-4. Precautions on Adjustments" and execute the initial setting before the adjustment as required.

Setting Procedure :
1. Rotate the AMS dial to display "ADJ CLEAR".
2. Press the ENTER/YES button. "Complete!" will be displayed momentarily and initial setting will be executed, after which "ADJ CLEAR" will be displayed.

7-8. RECORDING AND DISPLAYING THE IOP INFORMATION

The IOP data can be recorded in the non-volatile memory. The IOP value on the label of the optical pickup and the IOP value after the adjustment will be recorded. Recording these data eliminates the need to read the label on the optical pick-up.

Recording Procedure :
1. With the power ON, press the CD-MD SYNC button while pressing the ■ and ENTER/YES buttons together.
2. Rotate the AMS dial to display "Service", and press the ENTER/YES button.
3. Rotate the AMS dial to display "Iop.Write", and press the ENTER/YES button.
4. The display becomes Ref=@@@.@ (@ is an arbitrary number) and the numbers which can be changed will blink.
5. Input the IOP value written on the optical pick-up.
   To select the number : Rotate the AMS dial.
   To select the digit : Press the MD MALKMAN SYNC button.
6. When the ENTER/YES button is pressed, the display becomes "Measu=@@@.@" (@ is an arbitrary number).
7. As the adjustment results are recorded for the 6 value. Leave it as it is and press the ENTER/YES button.
8. "Complete!" will be displayed momentarily. The value will be recorded in the non-volatile memory and the display will become "Iop Write".

Display Procedure :
1. Rotate the AMS dial to display "Iop.Read".
2. "@@.@/##.#" is displayed and the recorded contents are displayed.
   @@.@ indicates the Iop value labeled on the pick-up.
   ##.# indicates the Iop value after adjustment
3. To end, press the MD MALKMAN SYNC button or MENU/NO button to display "Iop Read".

7-9. TEMPERATURE COMPENSATION OFFSET ADJUTMENT

Save the temperature data at that time in the non-volatile memory as 25 ˚C reference data.

Note :
1. Usually, do not perform this adjustment.
2. Perform this adjustment in an ambient temperature of 22 ˚C to 28 ˚C. Perform it immediately after the power is turned on when the internal temperature of the unit is the same as the ambient temperature of 22 ˚C to 28 ˚C.
3. When D101 has been replaced, perform this adjustment after the temperature of this part has become the ambient temperature.

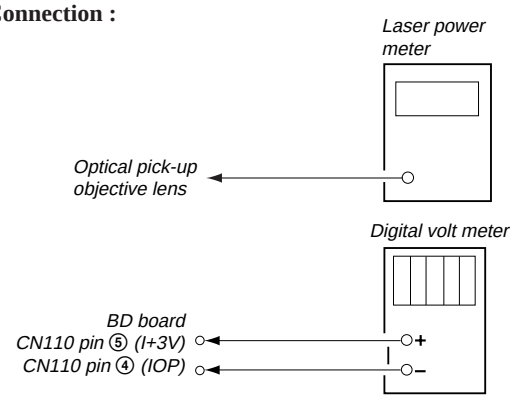
Adjusting Procedure :
1. Rotate the AMS dial and display "TEMP ADJUST".
2. Press the ENTER/YES button and select the "TEMP ADJUST" mode.
3. "TEMP = ▯▯ OK" and the current temperature data will be displayed.
4. To save the data, press the ENTER/YES button.
   When not saving the data, press the MENU/NO button.
5. When the ENTER/YES button is pressed, "TEMP = ▯▯ SAVE" will be displayed and turned back to "TEMP ADJUST" display then. When the MENU/NO button is pressed, "TEMP ADJUST" will be displayed immediatelly.

Specified Value :
The "TEMP = ▯▯" should be within "E0 - EF", "F0 - FF", "00 - 0F", "10 - 1F" and "20 - 2F".

7-10. LASER POWER ADJUSTMENT

Check the IOP value of the optical pick-up before adjustments. (Refer to 7-8. Recording and Displaying IOP Information.)

Connection :



Adjusting Procedure :
1. Set the laser power meter on the objective lens of the optical pick-up. (When it cannot be set properly, press the ■ button and display the "MD", and then press the ◀◀ button or ▶▶ button to move the optical pick-up.)
   Connect the digital volt meter to CN110 pin ⑤ (I+3V) and CN110 pin ④ (IOP).
2. Rotate the AMS dial and display "LDPWR ADJUST". (Laser power : For adjustment)
3. Press the ENTER/YES button once and display "LD 0.9 mW $ ▯▯".
4. Rotate the AMS dial so that the reading of the laser power meter becomes 0.85 to 0.91 mW. Press the ENTER/YES button after setting the range knob of the laser power meter, and save the adjustment results. ("LD SAVE $ ▯▯" will be displayed for a moment.)
5. Then "LD 7.0 mW $ ▯▯" will be displayed.

6. Rotate the AMS dial so that the reading of the laser power meter becomes 6.9 to 7.1 mW, press the ENTER/YES button and save it.

Note : Do not perform the emission with 7.0 mW more than 15 seconds continuously.

7. Then, rotate the AMS dial and display "LDPWR CHECK".
8. Press the ENTER/YES button once and display "LD 0.9 mW $ ". Check that the reading of the laser power meter become 0.85 to 0.91 mW.
9. Press the ENTER/YES button once more and display "LD 7.0 mW $ ". Check that the reading the laser power meter and digital volt meter satisfy the specified value.
   Note down the digital voltmeter reading value.

Specified Value :

Laser power meter reading : 7.0 ± 0.1 mW
Digital voltmeter reading : Optical pick-up displayed value ± 10%

(Optical pick-up label)

KMS260A
27X40
B0825

(For details of the method for checking this value, refer to "7-8. Recording and Displaying IOP Information".)

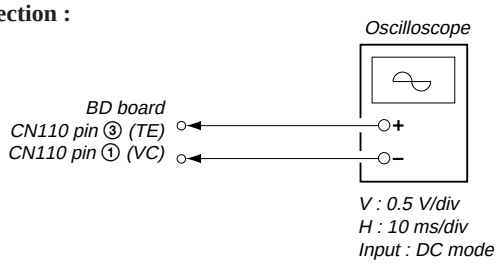
Iop = 82.5 mA in this case
Iop (mA) = Digital voltmeter reading (mV)/1 (Ω)

10. Press the MENU/NO button and display "LDPWR CHECK" and stop the laser emission.
    (The MENU/NO button is effective at all times to stop the laser emission.)
11. Rotate the AMS knob to display "Iop.Write".
12. Press the ENTER/YES button. When the display becomes Ref=@@@.@ (@ is an arbitrary number), press the ENTER/YES button to display "Measu=@@@.@" (@ is an arbitrary number).
13. The numbers which can be changed will blink. Input the Iop value noted down at step 9.
    To select the number : Rotate the AMS dial.
    To select the digit : Press the AMS dial.
14. When the ENTER/YES button is pressed, "Complete!" will be displayed momentarily. The value will be recorded in the non-volatile memory and the display will become "Iop Write".

Note 1: After step 4, each time the ENTER/YES button is pressed, the display will be switched between "LD 0.7 mW $ ", "LD 6.2 mW $ ", and "LD WP $ ". Nothing needs to be performed here.

7-11. TRAVERSE ADJUSTMENT

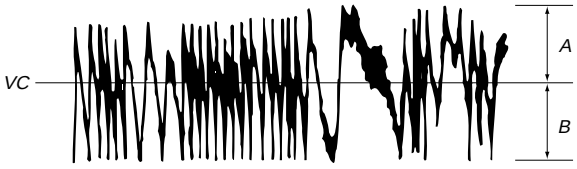
Connection :



Adjusting Procedure :

1. Connect an oscilloscope to CN110 pin ③ (TE) and CN110 pin ① (VC) of the BD board.
2. Load a disc (any available on the market). (Refer to Note 1.)
3. Press the ■ button and display the "MD", and then press the ■ button and display the "MD", and then press the ►► button and move the optical pick-up outside the pit.
4. Rotate the AMS dial and display "EF MO ADJUS" (C11).
5. Press the ENTER/YES button and display "EFB = MO-R". (Laser power READ power/Focus servo ON/tracking servo OFF/spindle (S) servo ON)
6. Rotate the AMS dial so that the waveform of the oscilloscope becomes the specified value.
   (When the AMS dial is rotated, the of "EFB= " changes and the waveform changes.) In this adjustment, waveform varies at intervals of approx. 2%. Adjust the waveform so that the specified value is satisfied as much as possible.
   (Read power traverse adjustment)

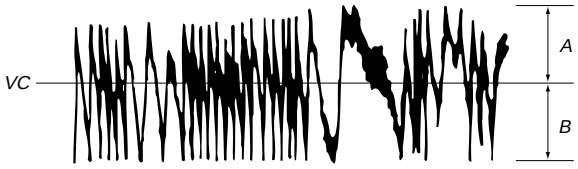
(Traverse Waveform)



Specification A = B

7. Press the ENTER/YES button and save the result of adjustment to the non-volatile memory ("EFB = SAVE" will be displayed for a moment. Then "EFB = MO-W" will be displayed).
8. Rotate the AMS dial so that the waveform of the oscilloscope becomes the specified value.
   (When the AMS dial is rotated, the of "EFB- " changes and the waveform changes.) In this adjustment, waveform varies at intervals of approx. 2%. Adjust the waveform so that the specified value is satisfied as much as possible.
   (Write power traverse adjustment)

(Traverse Waveform)

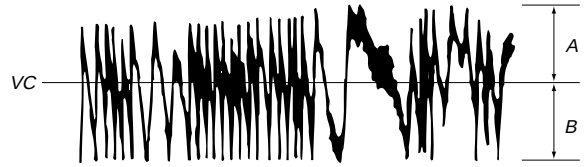


Specification A = B

9. Press the ENTER/YES button, and save the adjustment results in the non-volatile memory. ("EFB = SAVE" will be displayed for a moment.)
10. "EFB = MO-P". will be displayed.
    The optical pick-up moves to the pit area automatically and servo is imposed.

11. Rotate the AMS dial until the waveform of the oscilloscope moves closer to the specified value.
    In this adjustment, waveform varies at intervals of approx. 2%. Adjust the waveform so that the specified value is satisfied as much as possible.

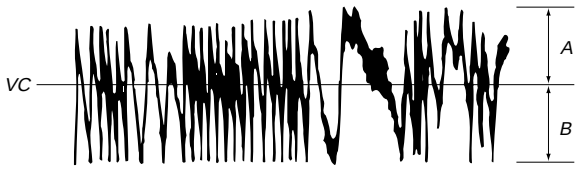
(Traverse Waveform)



Specification A = B

12. Press the ENTER/YES button, and save the adjustment results in the non-volatile memory. ("EFB = ▯▯ SAVE" will be displayed for a moment.)
    Next "EF MO ADJUST" is displayed. The disc stops rotating automatically.
13. Press the ⏏EJECT (MD) button and remove the disc.
14. Load the check disc (MD) TDYS-1.
15. Roteto AMS dial and display "EF CD ADJUST".
16. Press the ENTER/YES button and display "EFB = ▯▯ CD". Servo is imposed automatically.
17. Rotate the AMS dial so that the waveform of the oscilloscope moves closer to the specified value.
    In this adjustment, waveform varies at intervals of approx. 2%. Adjust the waveform so that the specified value is satisfied as much as possible.

(Traverse Waveform)

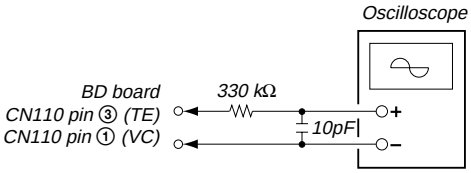


Specification A = B

18. Press the ENTER/YES button, display "EFB = ▯▯ SAVE" for a moment and save the adjustment results in the non-volatile memory.
    Next "EF CD ADJUST" will be displayed.
19. Press the ⏏EJECT (MD) button and remove the check disc (MD) TDYS-1.

Note 1 : MO reading data will be erased during if a recorded disc is used in this adjustment.

Note 2 : If the traverse waveform is not clear, connect the oscilloscope as shown in the following figure so that it can be seen more clearly.



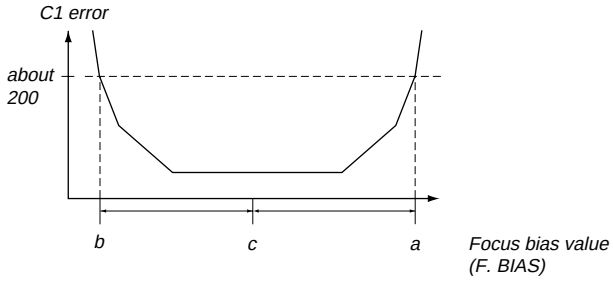
7-12. FOCUS BIAS ADJUSTMENT

Adjusting Procedure :

1. Load a test disk (MDW-74/AU-1).
2. Rotate the AMS dial and display "CPLAY MODE".
3. Press the ENTERYES button and display "CPLAY MID".
4. Press the MENU/NO button when "C1 = ▯▯▯▯ AD = ▯▯" is displayed.
5. Rotate the AMS dial and display "FBIAS ADJUS".
6. Press the ENTER/YES button and display " ▯▯▯▯/▯▯ a = ▯▯". The first four digits indicate the C1 error rate, the two digits after [/] indicate ADER, and the 2 digits after [a =] indicate the focus bias value.
7. Rotate the AMS dial in the clockwise direction and find the focus bias value at which the C1 error rate becomes about 200 (Refer to Note 2).
8. Press the ENTER/YES button and display " ▯▯▯▯/▯▯ b = ▯▯".
9. Rotate the AMS dial in the counterclockwise direction and find the focus bias value at which the C1 error rate becomes about 200.
10. Press the ENTER/YES button and display " ▯▯▯▯/▯▯ c = ▯▯".
11. Check that the C1 error rate is below 50 and ADER is 00. Then press the ENTER/YES button.
12. If the "(▯▯)" in "▯▯ - ▯▯ - ▯▯ (▯▯)" is above 20, press the ENTER/YES button.
    If below 20, press the MENU/NO button and repeat the adjustment from step 2.
13. Press the ⏏EJECT (MD) button to remove the test disc.

Note 1 : The relation between the C1 error and focus bias is as shown in the following figure. Find points a and b in the following figure using the above adjustment. The focal point position C is automatically calculated from points a and b.

Note 2 : As the C1 error rate changes, perform the adjustment using the average vale.



7-13. ERROR RATE CHECK

7-13-1. CD Error Rate Check

Checking Procedure :

1. Load a check disc (MD) TDYS-1.
2. Rotate the AMS dial and display "CPLAY MODE".
3. Press the ENTER/YES button twice and display "CPLAY MID".
4. The display changes to "C1 = □□□□ AD = □□".
5. Check that the C1 error rate is below 20.
6. Press the MENU/NO button, stop playback, press the ≙EJECT (MD) button, and remove the test disc.

7-13-2. MO Error Rate Check

Checking Procedure :

1. Load a test disc (MDW-74/AU-1).
2. Rotate the AMS dial and display "CPLAY MODE".
3. Press the ENTER/YES button and display "CPLAY MID".
4. The display changes to "C1 = □□□□ AD = □□".
5. If the C1 error rate is below 50, check that ADER is 00.
6. Press the MENU/NO button, stop playback, press the ≙EJECT (MD) button, and remove the test disc.

7-14. FOCUS BIAS CHECK

Change the focus bias and check the focus tolerance amount.

Checking Procedure :

1. Load a test disc (MDW-74/AU-1).
2. Rotate the AMS dial and display "CPLAY MODE".
3. Press the ENTER/YES button twice and display "CPLAY MID".
4. Press the MENU/NO button when "C1 = □□□□ AD = □□" is displayed.
5. Rotate the AMS dial and display "FBIAS CHECK".
6. Press the ENTER/YES button and display " □□□□/□□ c = □□". The first four digits indicate the C1 error rate, the two digits after "/" indicate ADER, and the 2 digits after "c =" indicate the focus bias value.
   Check that the C1 error is below 50 and ADER is below 2.
7. Press the ENTER/YES button and display " □□□□/□□ b = □□". Check that the C1 error is below 220 and ADER is below 2.
8. Press the ENTER/YES button and display " □□□□/□□ a = □□". Check that the C1 error is below 220 and ADER is below 2.
9. Press the MENU/NO button, next press the ≙EJECT (MD) button, and remove the continuously recorded disc.

Note 1 : If the C1 error and ADER are above other than the specified value at points a (step 8. in the above) or b (step 7. in the above), the focus bias adjustment may not have been carried out properly. Adjust perform the beginning again.

7-15. AUTO GAIN CONTROL OUTPUT LEVEL ADJUSTMENT

Be sure to perform this adjustment when the pickup is replaced. If the adjustment results becomes "Adjust NG!", the pickup may be faulty or the servo system circuits may be abnormal.

7-15-1. CD Auto Gain Control Output Level Adjustment

Adjusting Procedure :

1. Insert the check disc (MD) TDYS-1.
2. Rotate the AMS dial to display "AG Set (CD)".
3. When the ENTER/YES button is pressed, the adjustment will be performed automatically.
   "Complete!!" will then be displayed momentarily when the value is recorded in the non-volatile memory, after which the display changes to "AG Set (CD)".
4. Press the ≙EJECT (MD) button to remove the disc.

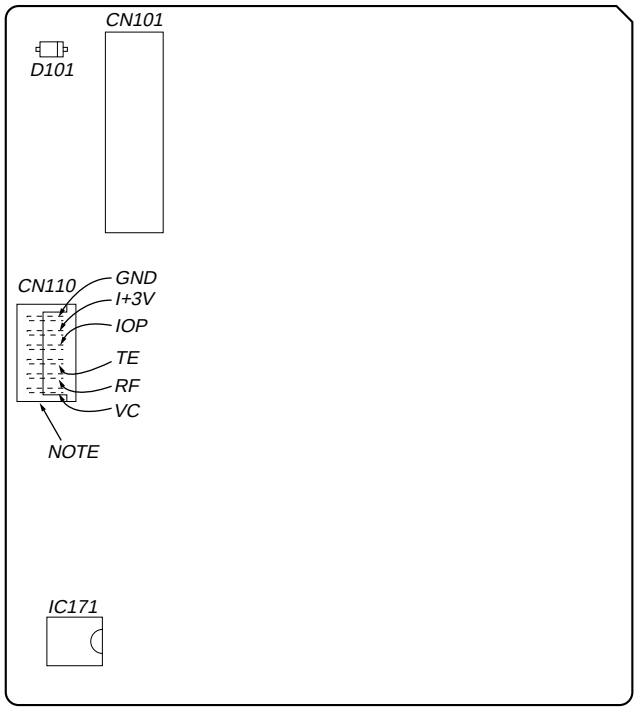
7-15-2. MO Auto Gain Control Output Level Adjustment

Adjusting Procedure :

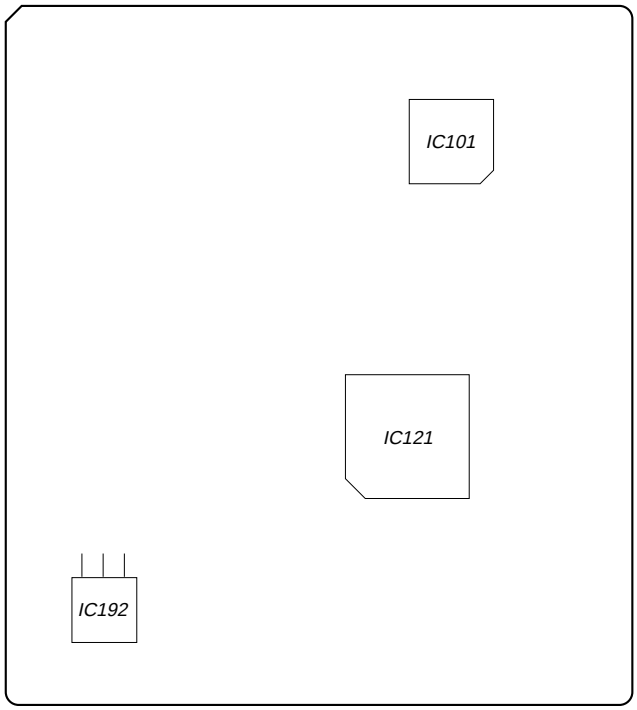
1. Insert the reference disc (MDW-74/AU-1) for recording.
2. Rotate the AMS dial to display "AG Set (MO)".
3. When the ENTER/YES button is pressed, the adjustment will be performed automatically.
   "Complete!!" will then be displayed momentarily when the value is recorded in the non-volatile memory, after which the display changes to "AG Set (MO)".
4. Press the ≙EJECT (MD) button to remove the disc.

7-16. ADJUSTING POINTS AND CONNECTING POINTS

[BD BOARD] (SIDE A)



[BD BOARD] (SIDE B)



NOTE: It is useful to use the jig. for checking the waveform. (Refer to Servicing Note on page 9.)

DECK SECTION **0 dB=0.775V**

1. Demagnetize the record/playback head with a head damagnetizer.
2. Do not use a magnetized screwdriver for the adjustments.
3. After the adjustments, apply suitable locking compound to the parts adjusted.
4. The adjustments should be performed with the rated power supply voltage unless otherwise noted.
5. The adjustments should be performed in the order given in this service manual. (As a general rule, playback circuit adjustment should be completed before performing recording circuit adjustment.)
6. The adjustments should be performed for both L-CH and R-CH.
7. Switches and controls should be set as follows unless otherwise specified.

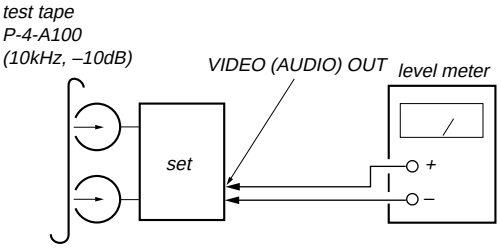
Tape	Signal	Used for
P-4-A100	10 kHz, –10 dB	Azimuth Adjustment
WS-48B	3 kHz, 0 dB	Tape Speed Adjustment
P-4-L300	315 Hz, 0 dB	Level Adjustment

Record/Playback Head Azimuth Adjustment (Deck A, Deck B)

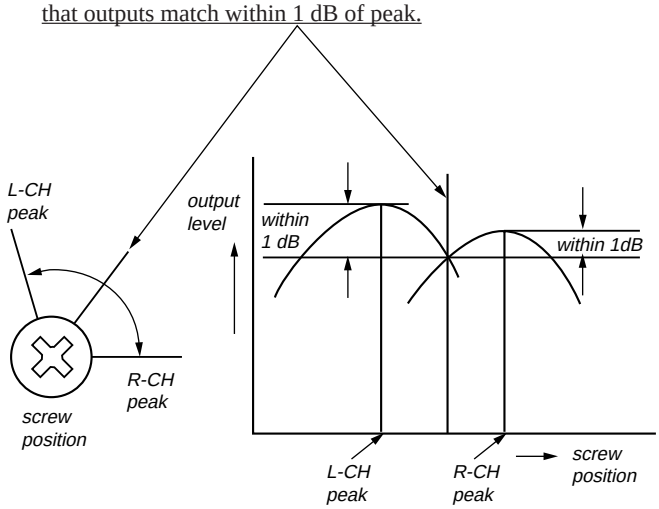
Note: Perform this adjustments for both decks.

Procedure:

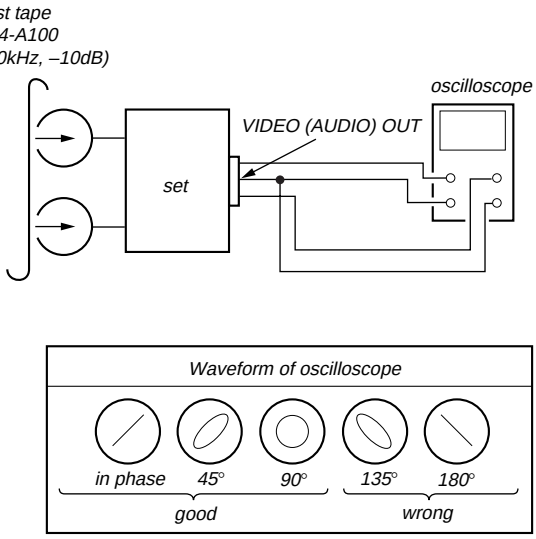
1. Mode : Playback



2. Turn the adjustment screw and check output peaks. If the peaks do not match for L-CH and R-CH, turn the adjustment screw so that outputs match within 1 dB of peak.

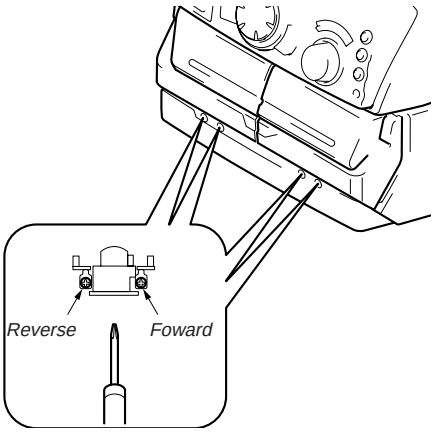


3. Mode: Playback



4. After the adjustments, apply suitable locking compound to the parts adjusted.

Adjustment Location: Playback Head (Deck A)
Record/Playback/Erase Head (Deck B)



Tape Speed Adjustment (Deck A)

Note: Set the test mode using the following method and begin tape speed adjustment.
In the test mode, the speed will switch to double speed or normal speed each time the HI DUB button is pressed.

Procedure:
With the power turned ON, press the ■ button, ENTER/NEXT button, and DISC 3 button simultaneously.
(The "CD TYPE INDICATOR" on the fluorescent display tube will blink while in the test mode.)
To exit the test mode, press the I/⏻ button.

1. Insert the WS-48B into deck B.
2. Press the ► button of deck B.
3. Press the HI DUB button and play the tape at double speed.
4. Adjust RV1001 of the LEAF SW board so that the reading of the frequency counter becomes 6000 ± 180 Hz.
5. Press the HI DUB button and play the tape at normal speed.
6. Adjust RV1002 of the LEAF SW board so that the reading of the frequency counter becomes 3000 ± 90 Hz.

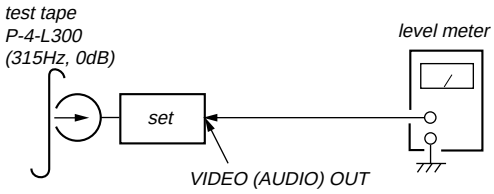
Adjustment Location: LEAF SW board

Sample Value of Wow and flutter

W.RMS (JIS) less than 0.3%
(test tape: WS-48B)

Playback Level Adjustment (Deck A, Deck B)

Procedure:
Mode: Playback



Deck A is RV311 (L-CH) and RV411 (R-CH), deck B is RV301 (L-CH) and RV401 (R-CH)
so that adjustment within the following adjustment level.

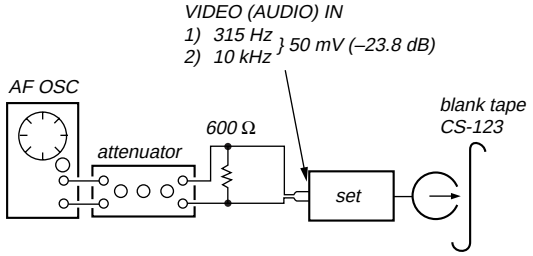
Adjustment level:
CN301 playback level: 301.5 to 338.3 mV (–8.2 to –7.2 dB)
level difference between the channels: within ± 0.5 dB
Adjustment Location: AUDIO board

Record Bias Adjustment (Deck B)

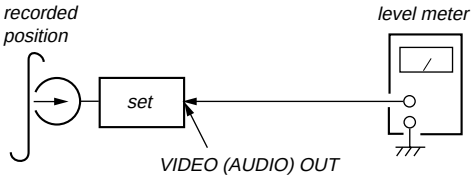
Procedure:

INTRODUCTION
When set to the test mode performed in **Tape Speed Adjustment**, when the tape is rewound after recording, the "REC memory mode" which rewinds only the recorded portion and playback is set.
This "REC memory mode" is convenient for performing this adjustment. During recording, the input signal FUNCTION will automatically switch to VIDEO.
(After recording, press the – ◄◄ button without stopping will return to the position where recording was started.)

1. Press FUNCTION button to select VIDEO. (This step is not necessary if the above test mode has already been set.)
2. Insert a tape into deck B, press the REC button, and then press the ► button to start recording.
3. Mode: Record



4. Mode: Playback

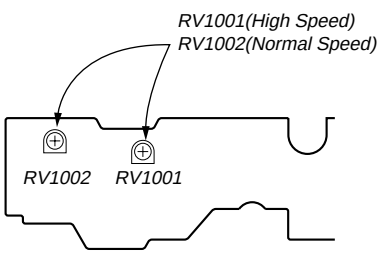


5. Confirm playback the signal recorded in step 2 become adjustment level as follows.
If these levels do not adjustment level, adjust the RV341 (L-CH) and RV441 (R-CH) on the AUDIO board to repeat steps 3 and 4.

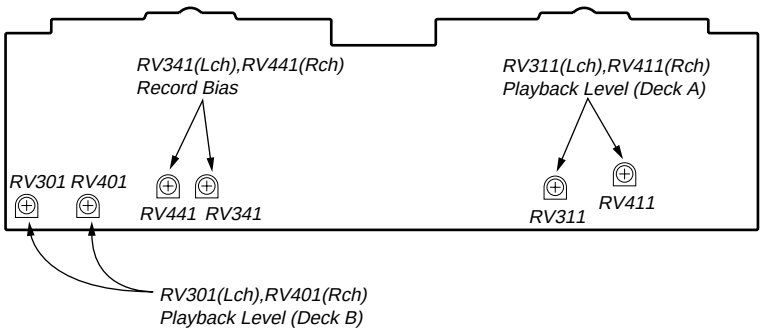
Adjustment level: The playback output of 10 kHz level difference against 315 Hz reference should be ± 1.0 dB.

Adjustment Location: AUDIO board

Adjustment Location [LEAF SW BOARD]



Adjustment Location:
[AUDIO BOARD] (Conductor Side)



Record Level Adjustment (Deck B)

Procedure:

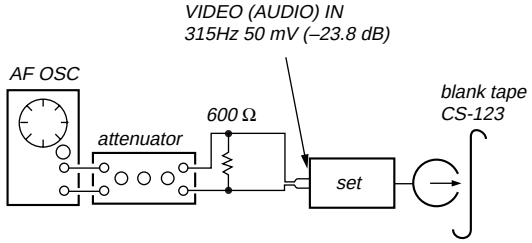
INTRODUCTION

When set to the test mode performed in **Tape Speed Adjustment**, when the tape is rewound after recording, the "REC memory mode" which rewinds only the recorded portion and playback is set.

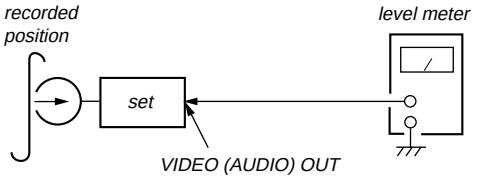
This "REC memory mode" is convenient for performing this adjustment. During recording, the input signal FUNCTION will automatically switch to VIDEO.

(After recording, press the [– ◀◀] button without stopping will return to the position where recording was started.)

1. Press [FUNCTION] button to select VIDEO 1. (This step is not necessary if the above test mode has already been set.)
2. Insert a tape into deck B, press the [● REC] button, and then press the [►] button to start recording.
3. Mode: Record



4. Mode: Playback



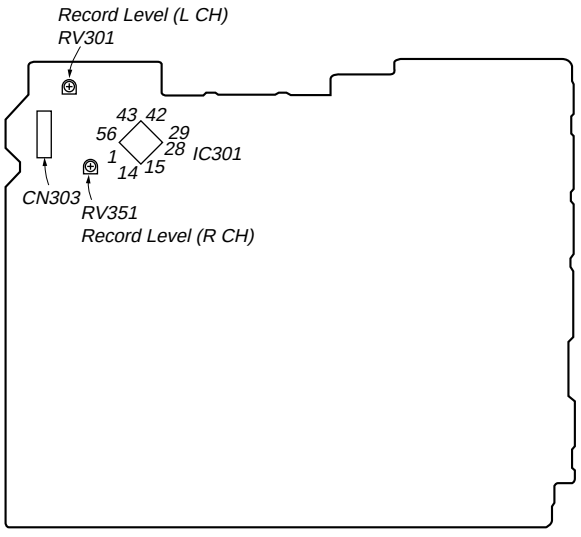
5. Confirm playback the signal recorded in step 2 become adjustment level as follows.
   If these levels do not adjustment level, adjust the RV301 (L-CH) and RV351 (R-CH) on the MAIN board to repeat steps 3 and 4.

Adjustment level:

CN403 playback level: 47.2 to 53.0 mV (–24.3 to –23.3 dB)

Adjustment Location: MAIN board

[MAIN BOARD] (Conductor Side)

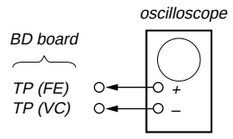


CD SECTION

Note:

1. CD Block is basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10MΩ impedance.
4. Clean the object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

S Curve Check



Procedure :

1. Connect the oscilloscope to test points TP (FE) and TP (VC).
2. Connect TP (FEI) and GND, and TP (AGCCON) and GND of the BD board with lead wires.
3. Press the I/⏻ button to turn the set ON.
4. With the disc (YEDS-18) loaded, press the ▶II button and perform focus search. (Focus search will be performed in the same way even while the disc table is pushed in and out.)
5. Check the symmetry and peak to peak level of the oscilloscope waveform (S curve) at this time.

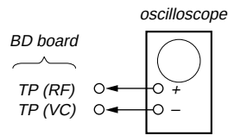
S-curve waveform

6. After check, remove the lead wire connected in step 2.

Note: • Try to measure several times to make sure than the ratio of A : B or B : A is more than 10 : 7.
• Take sweep time as long as possible and light up the brightness to obtain best waveform.

Adjustment Location : BD (CD) board

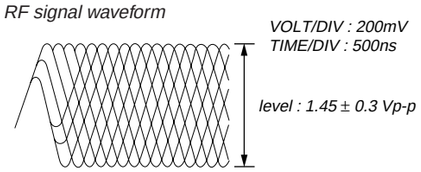
RF Level Check



Procedure :

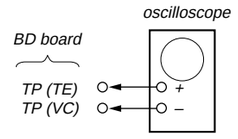
1. Connect oscilloscope to test point TP (RF) and TP (VC) on BD board.
2. Connect TP (AGCCON) and GND of the BD board with lead wires.
3. Press the I/⏻ button to turn the set ON.
4. Put disc (YEDS-18) in and playback 5track.
5. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.
6. After check, remove the lead wire connected in step 2.

Note: Clear RF signal waveform means that the shape "◊" can be clearly distinguished at the center of the waveform.



Adjustment Location : BD (CD) board

E-F Balance (1 Track Jump) check

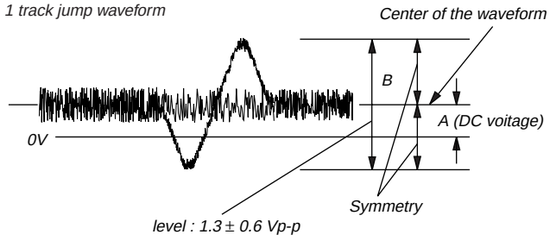


Procedure:

1. Connect oscilloscope to test point TP (TE) on BD board.
2. Press the I/⏻ button to turn the unit ON.
3. Put disc (YEDS-18) in to play the number five track.
4. Press the ▶II button.
5. Check the level B of the oscilloscope's waveform and the A (DC voltage) of the center of the Traverse waveform.
   Confirm the following:

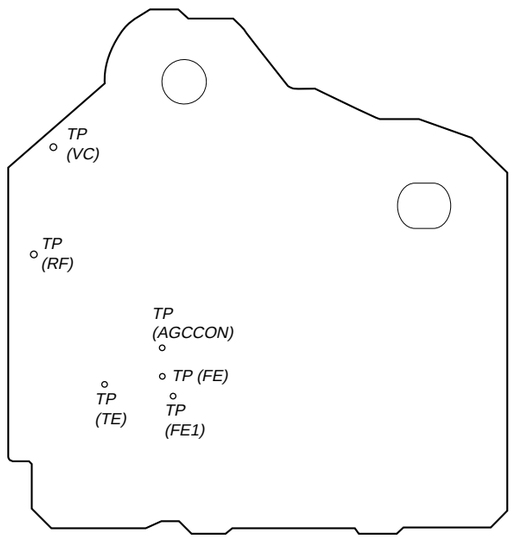
   • A/B x 100 = less then ± 22 (%)
   • B = 1.3 ± 0.6 Vp-p

1 track jump waveform



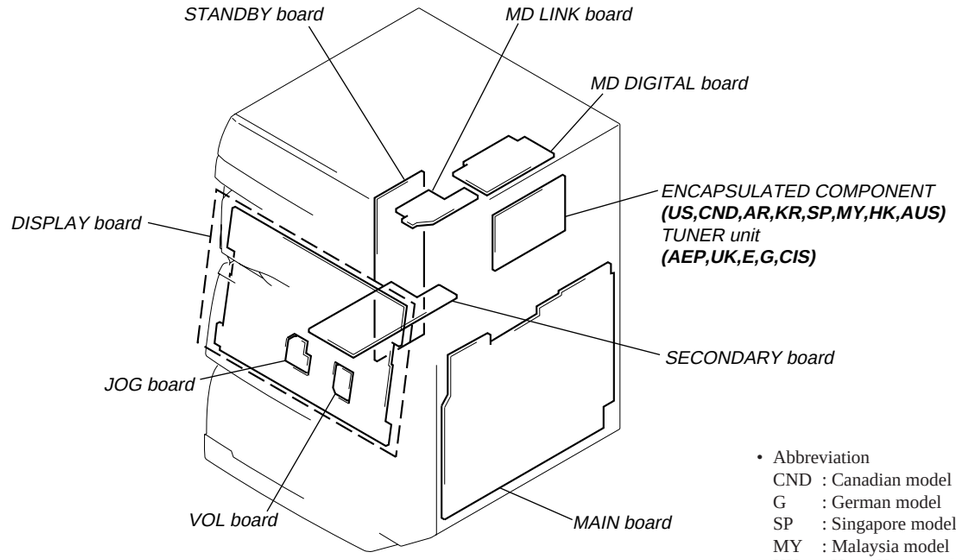
Adjustment Location : BD (CD) board

Adjustment Location :
[BD (CD) BOARD] — SIDE A —



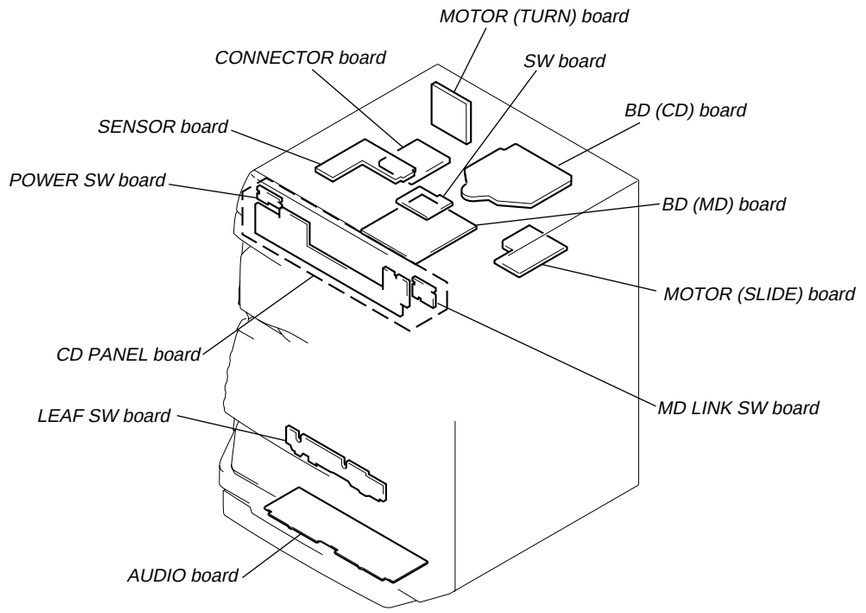
SECTION 8
DIAGRAMS

8-1. CIRCUIT BOARDS LOCATION

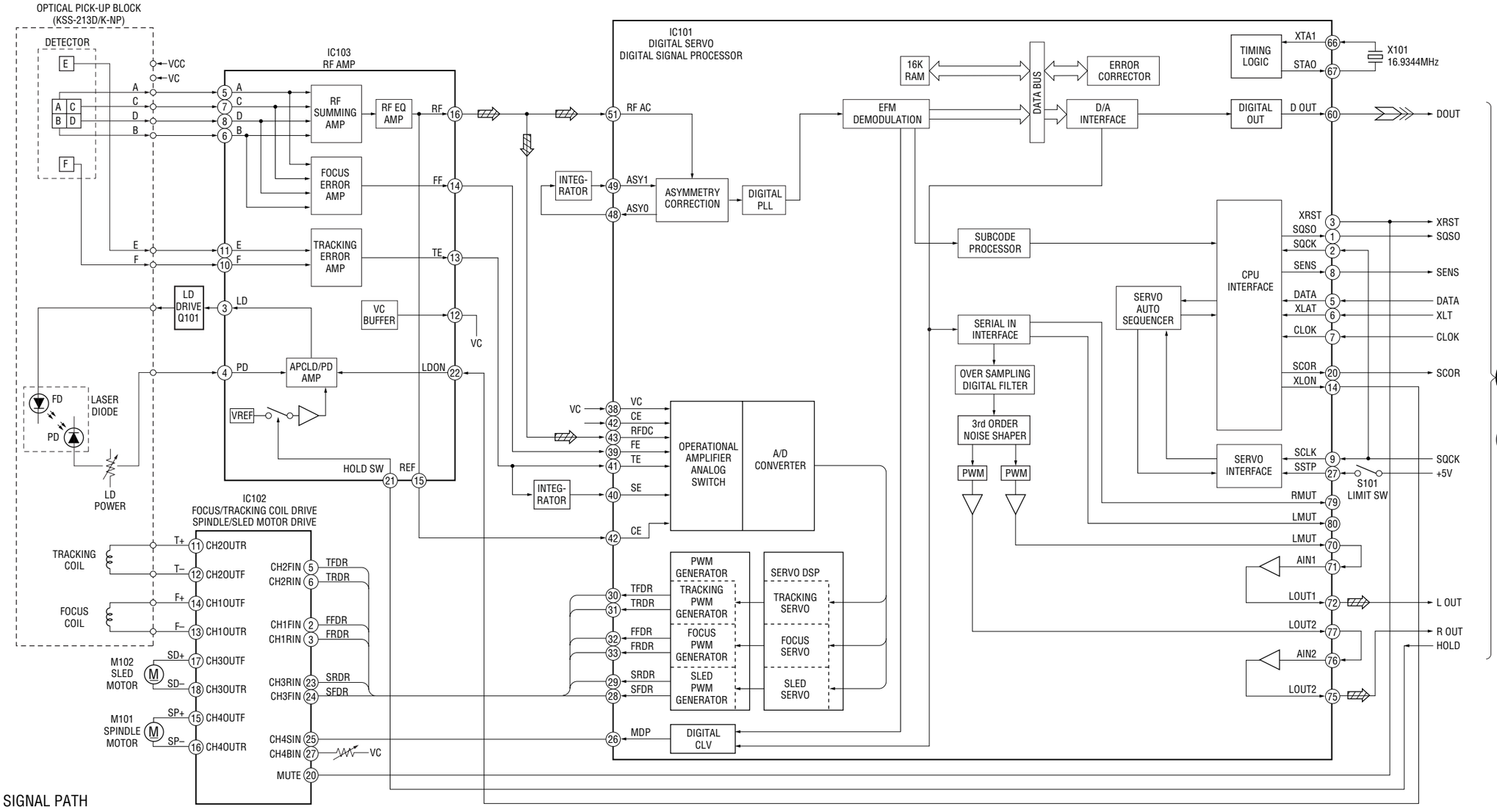


- Abbreviation
  CND : Canadian model
  G : German model
  SP : Singapore model
  MY : Malaysia model
  HK : Hong Kong model
  AR : Argentine model
  KR : Korea model
  AUS : Australian model

ENCAPSULATED COMPONENT/TUNER unit is supplied as the assembled block.



8-2. BLOCK DIAGRAMS
– BD (CD) SECTION –

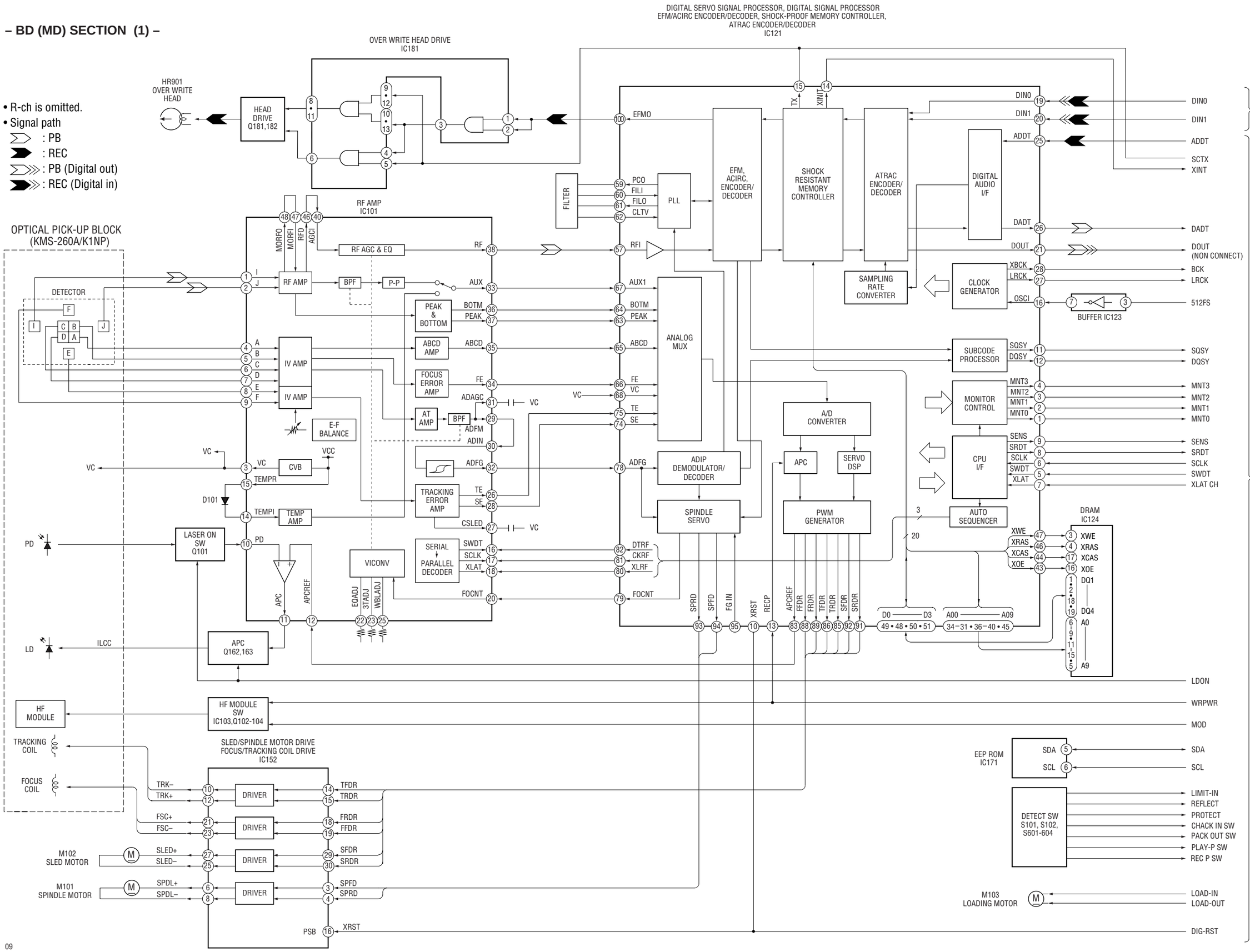


• SIGNAL PATH
: CD
: PB (Digital out)

09

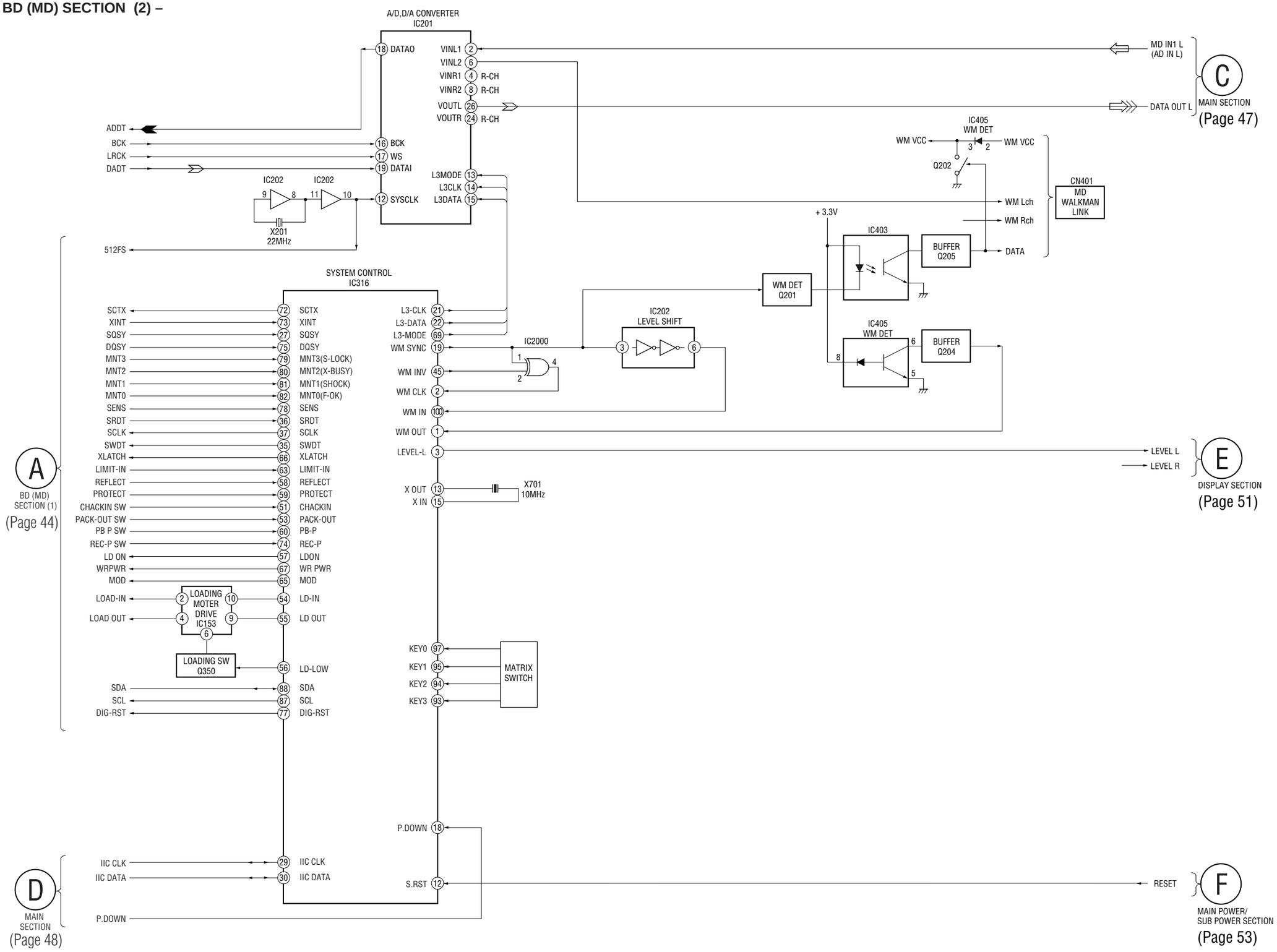
– BD (MD) SECTION (1) –

- R-ch is omitted.
- Signal path
  - : PB
  - : REC
  - : PB (Digital out)
  - : REC (Digital in)



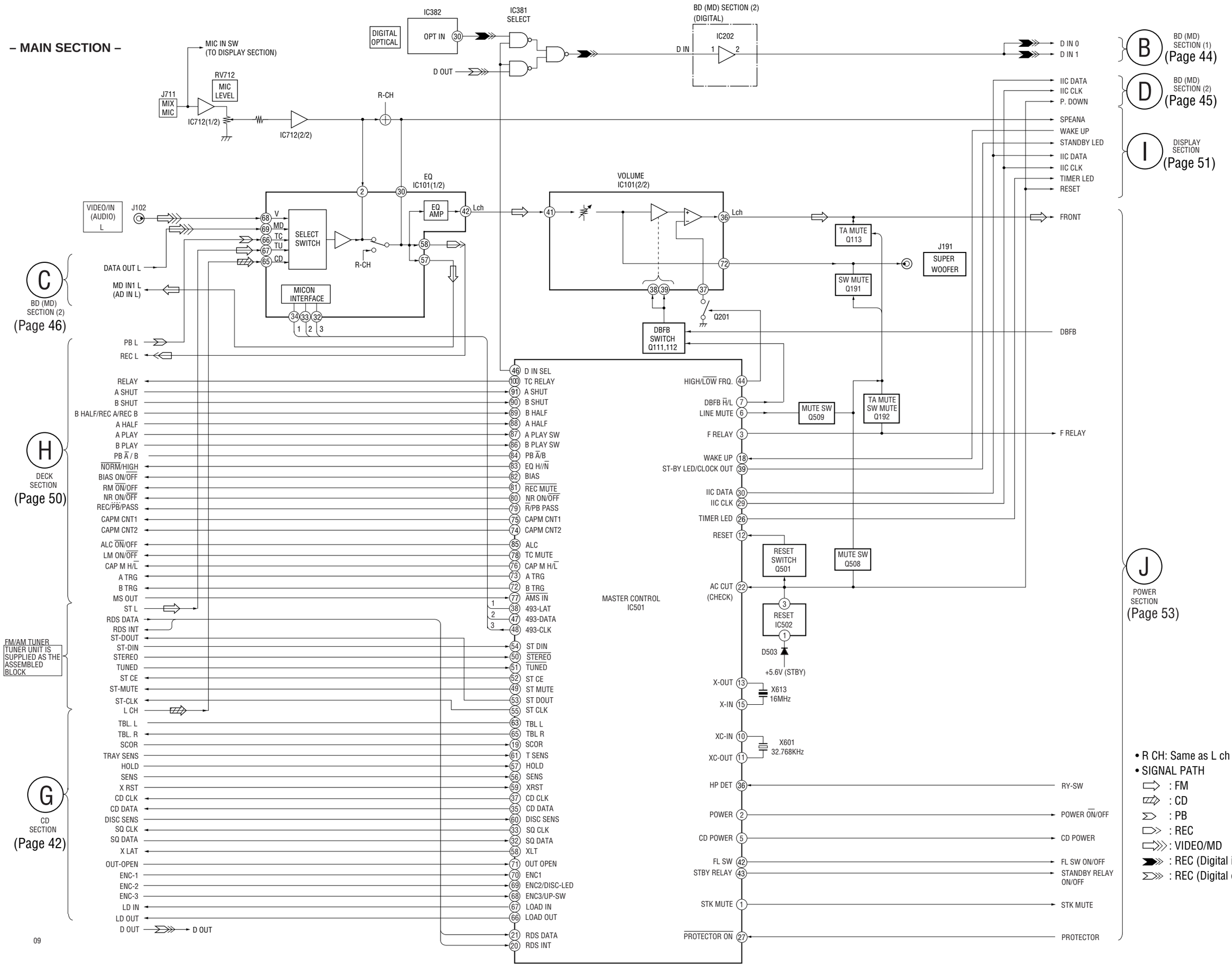
09

– BD (MD) SECTION (2) –



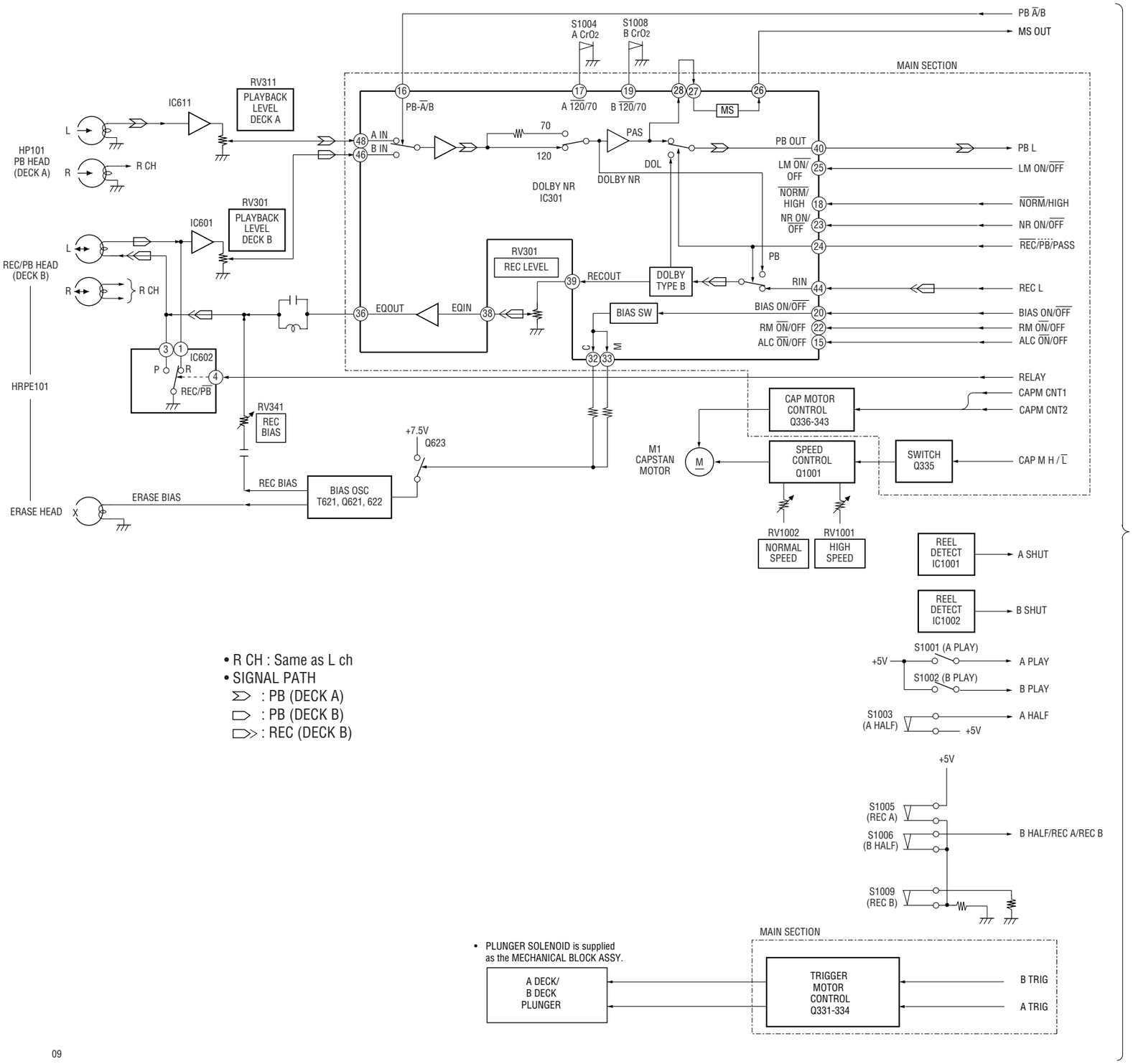
09

– MAIN SECTION –



09

– DECK SECTION –

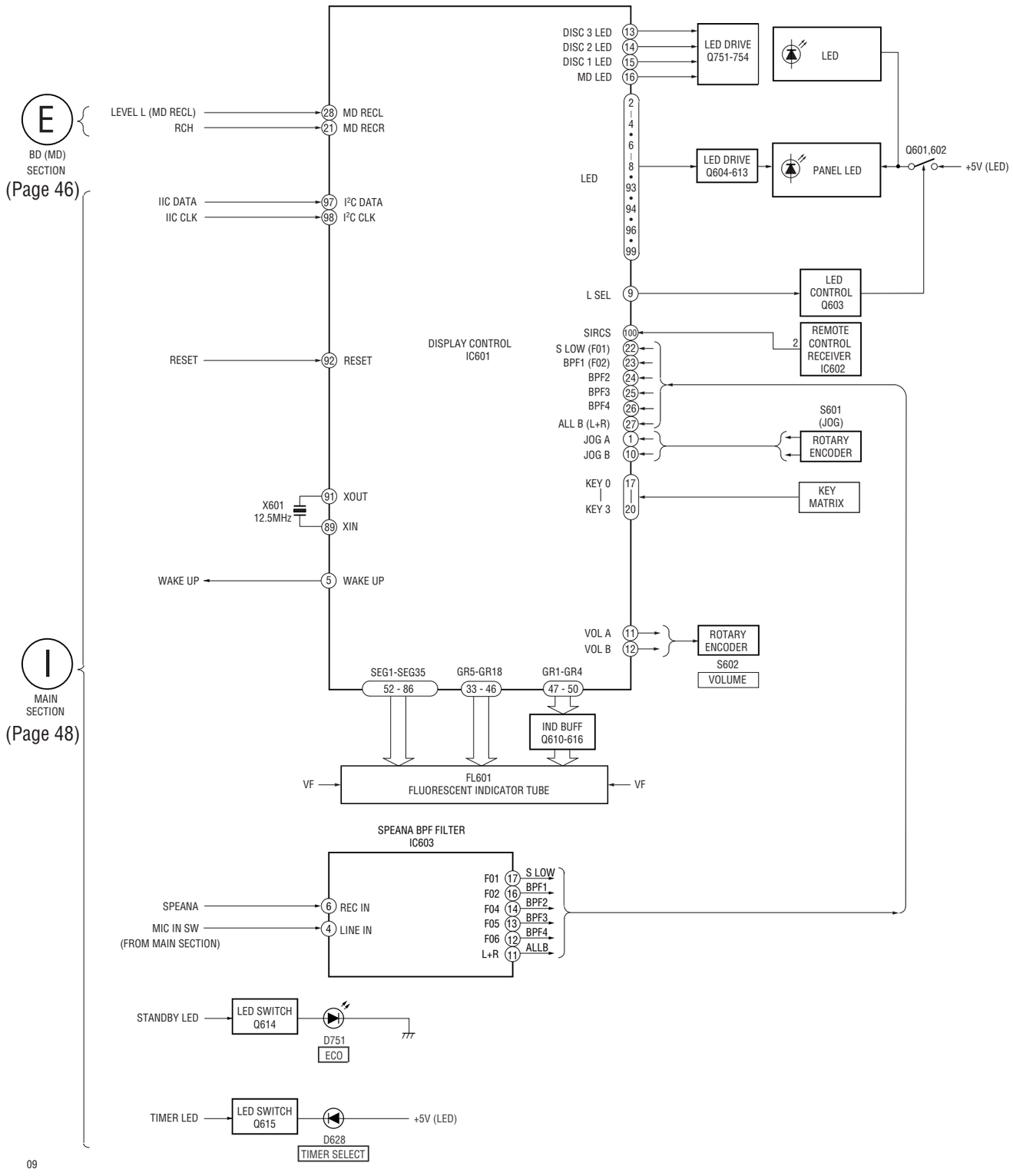


H
MAIN SECTION
(Page 47)

• R CH : Same as L ch
• SIGNAL PATH
  : PB (DECK A)
  : PB (DECK B)
  : REC (DECK B)

09

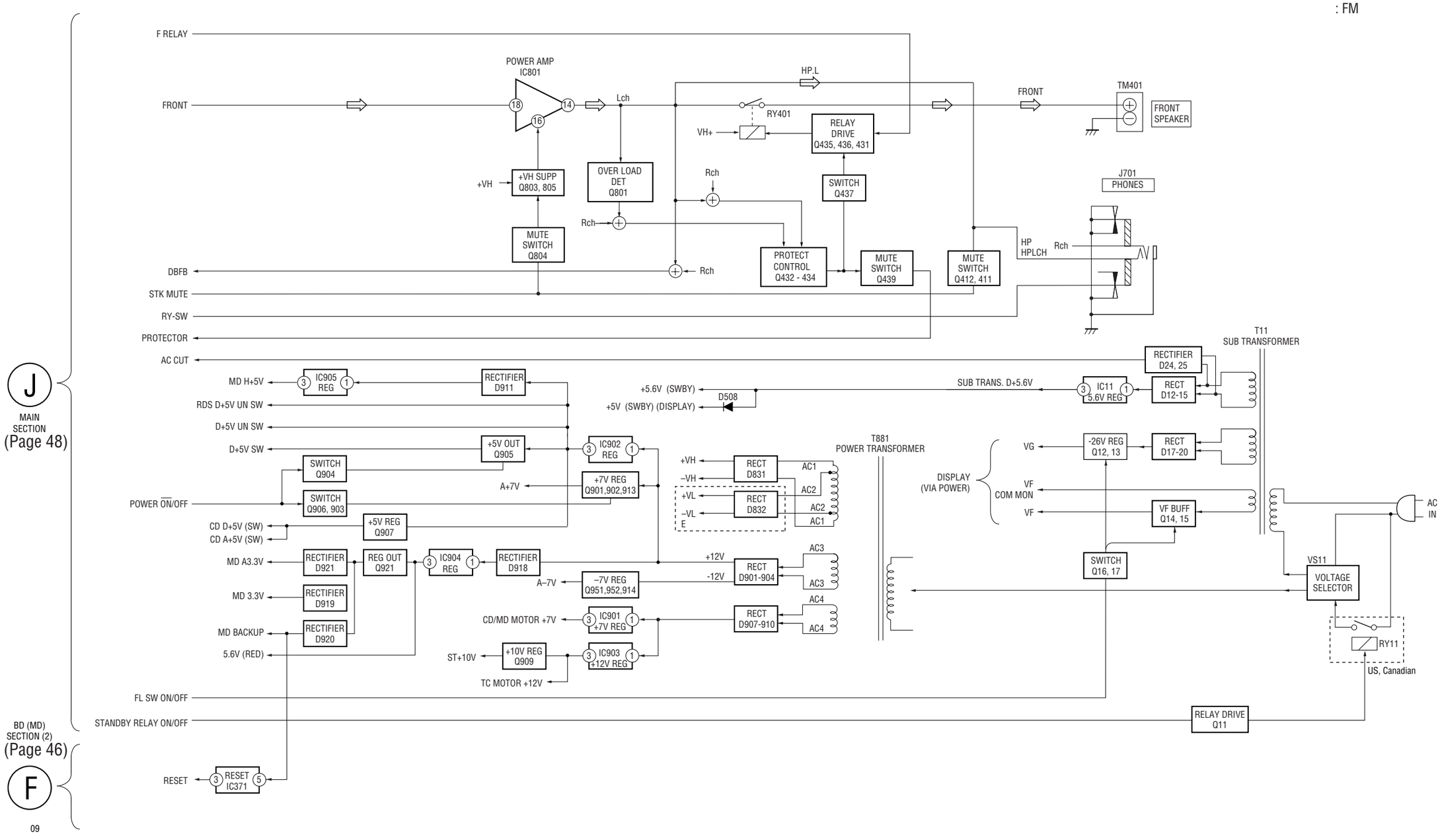
– DISPLAY SECTION –



– MAIN POWER/SUB POWER SECTION –

⇨

- R CH : Same as L ch
- SIGNAL PATH
  : FM



THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

For schematic diagrams.

Note:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- ▭ : panel designation.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

- B+ : B+ Line.
- B− : B– Line.
- ▭ : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  - : FM
  - : VIDEO
  - : PB (DECK A)
  - : PB (DECK B)
  - : REC (DECK B)
  - : CD
  - : CD (digital out)
  - : PB (MD)
  - : REC (MD)
  - : PB (digital out)
  - : REC (dihgital in)
- Abbreviation
  - CND : Canadian model.
  - G : German model.
  - SP : Singapore model.
  - MY : Malaysia model.
  - HK : Hong Kong model.
  - AR : Argentine model.
  - KR : korea model.
  - AUS : Australian model.

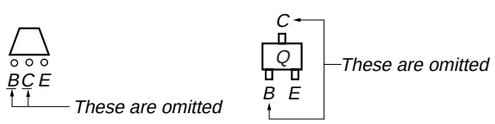
For printed wiring boards.

Note:

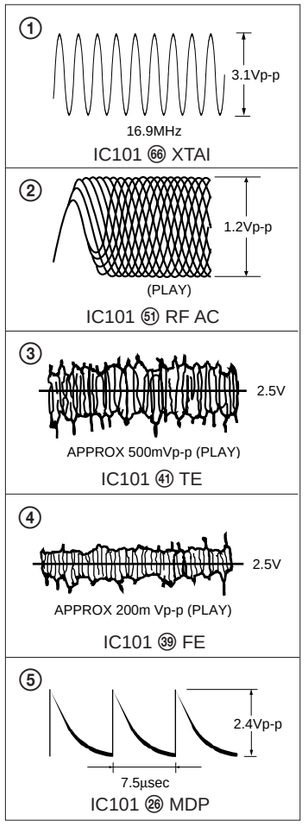
- ○——— : parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- ○ : Through hole.
- ▒▒ : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

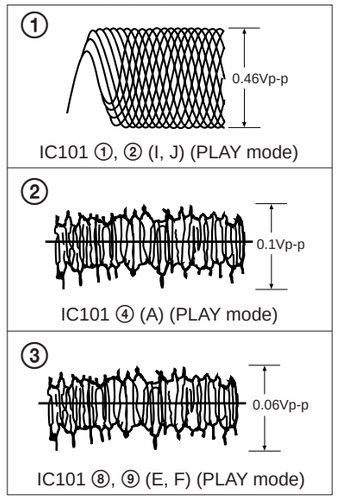
- **Indication of transistor**



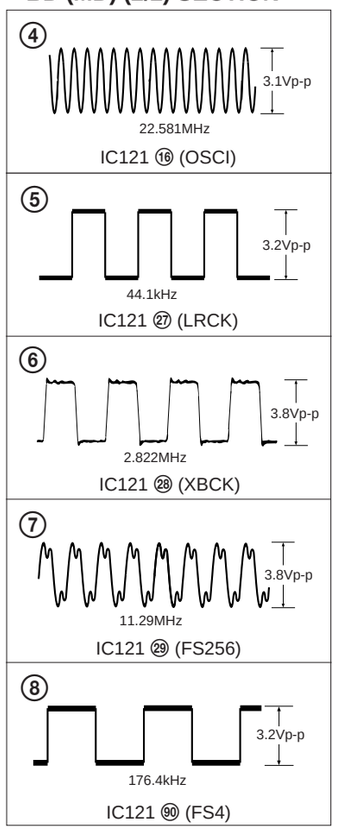
WAVEFORMS
– BD (CD) SECTION –



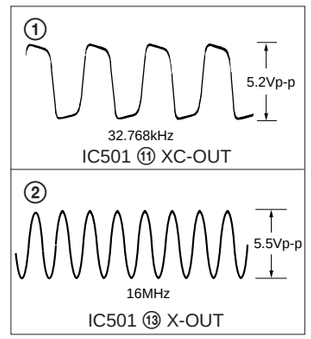
– BD (MD) (1/2) SECTION –



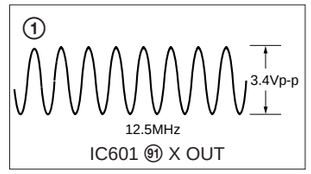
– BD (MD) (2/2) SECTION –



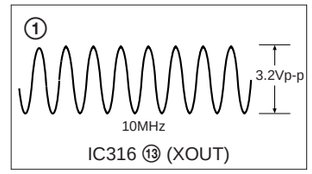
– MAIN (3/4) SECTION –



– PANEL (1/2) SECTION –



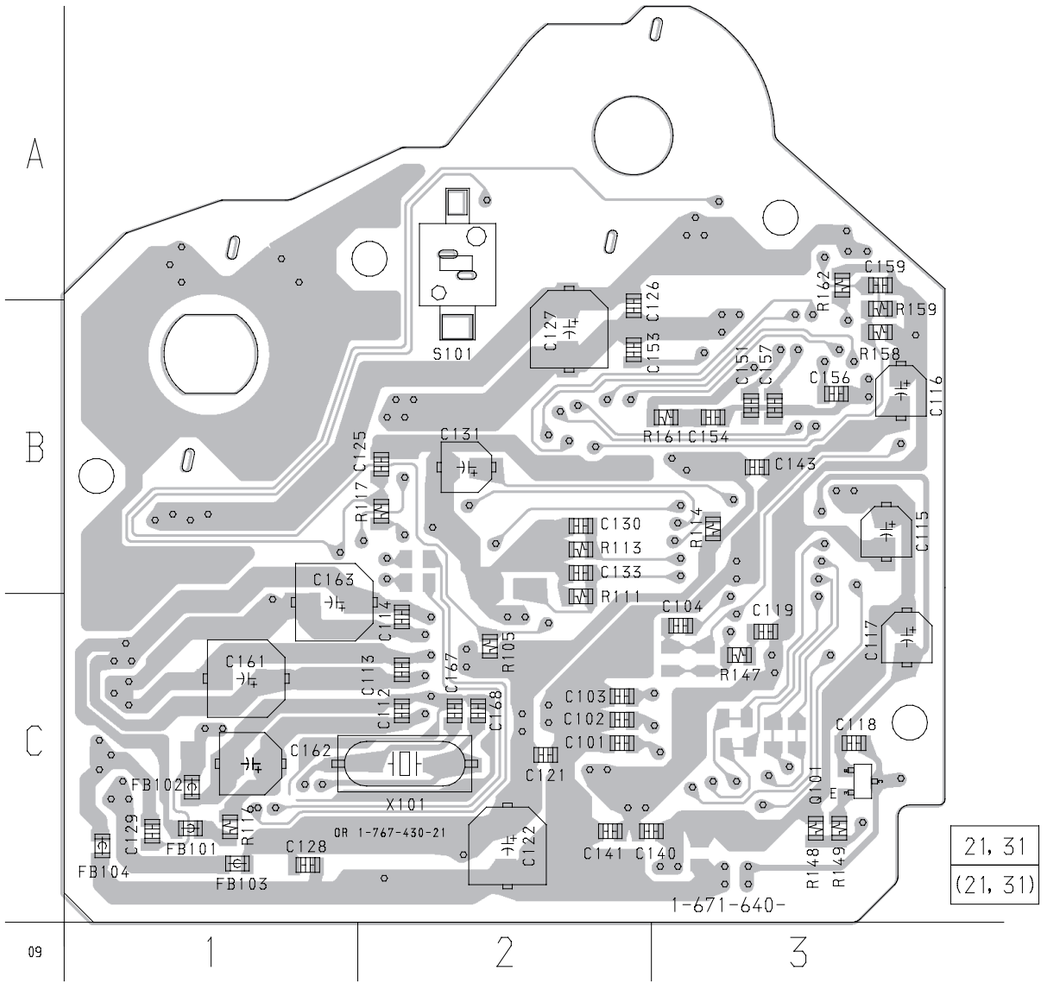
– MD DIGITAL (1/2) SECTION –



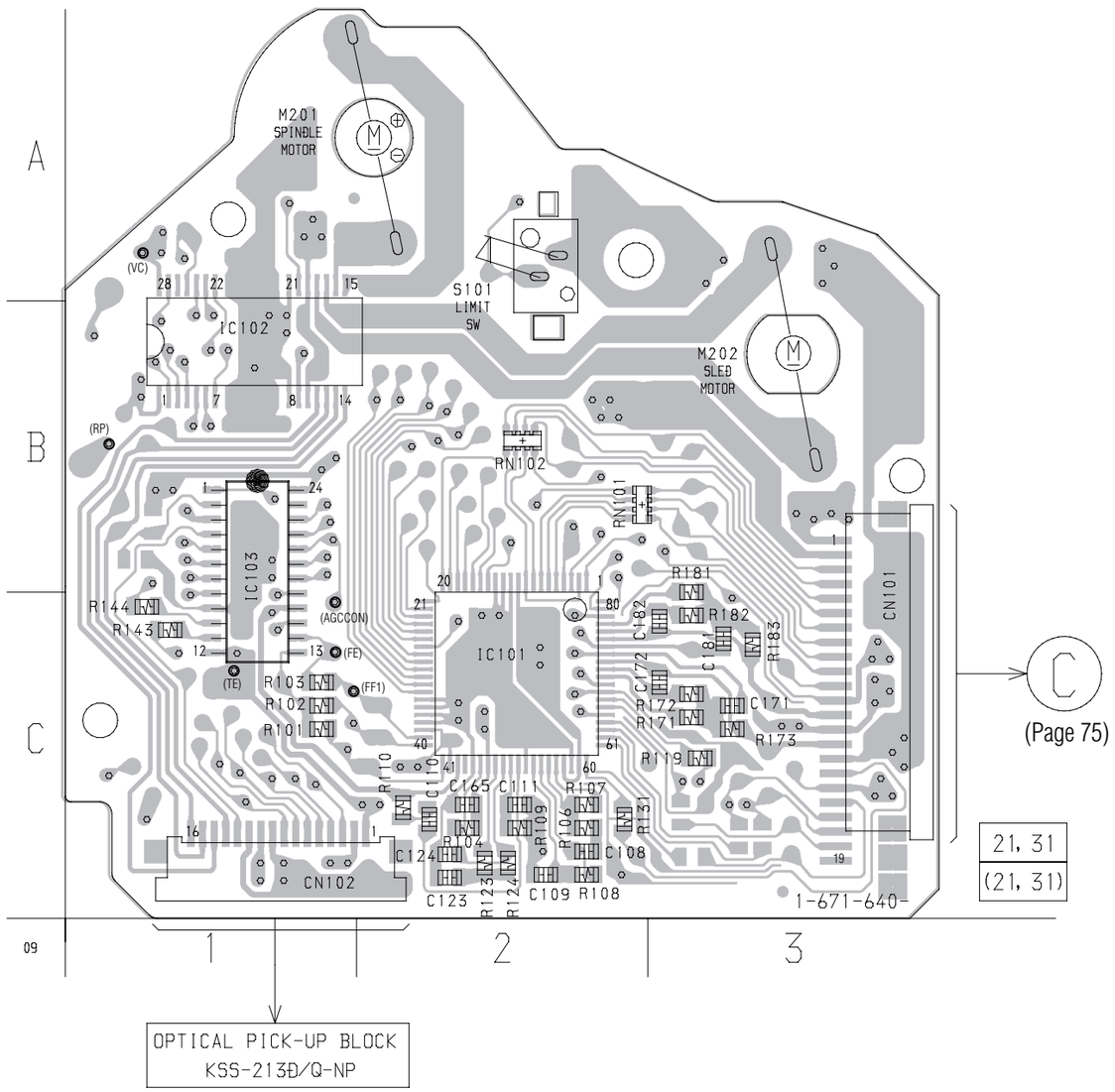
8-3. PRINTED WIRING BOARD – BD (CD) SECTION –

• See page 40 for Circuit Boards Location.

【 BD (CD) BOARD 】(SIDE A)

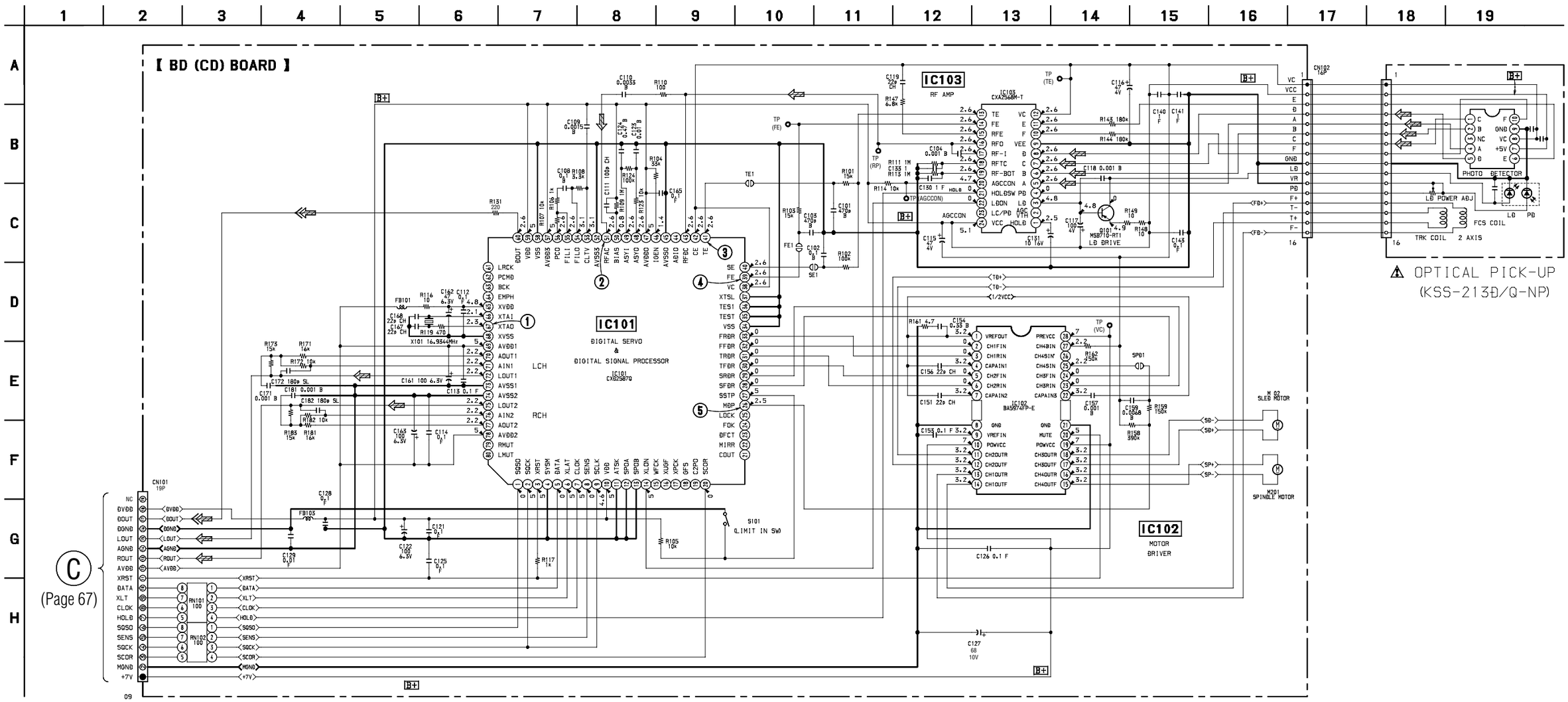


【 BD (CD) BOARD 】(SIDE B)



8-4. SCHEMATIC DIAGRAM – BD (CD) SECTION –

• See page 55 for Waveforms.



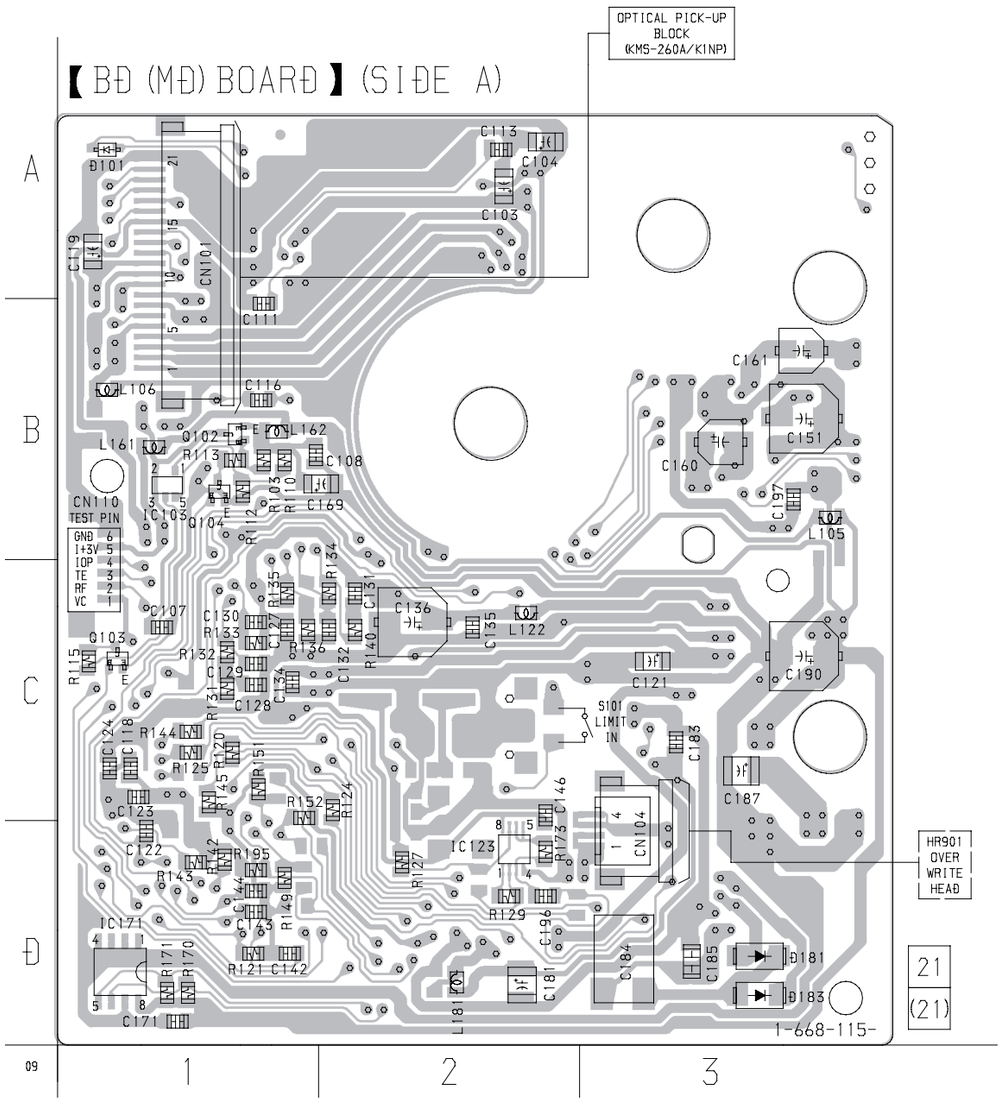
NOTE

• Voltages and waveforms are dc with respect to ground under no-signal conditions.
no mark:CD PLAY

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Note: Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

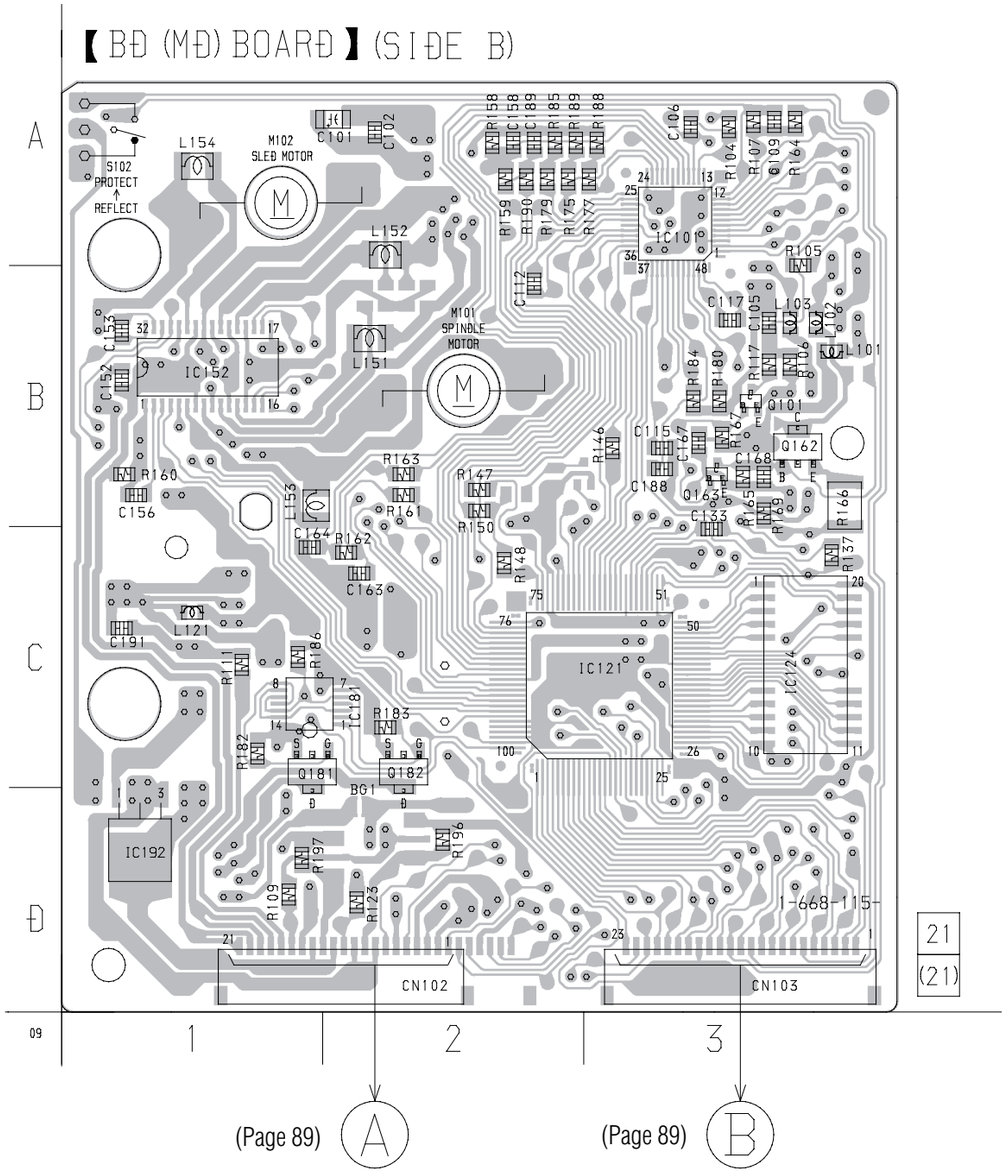
8-5. PRINTED WIRING BOARD – BD (MD) SECTION –

• See page 40 for Circuit Boards Location.



• Semiconductor Location

Ref. No.	Location
D101	A-1
D181	D-3
D183	D-3
IC103	B-1
IC123	D-2
IC171	D-1
Q102	B-1
Q103	B-1
Q104	B-1

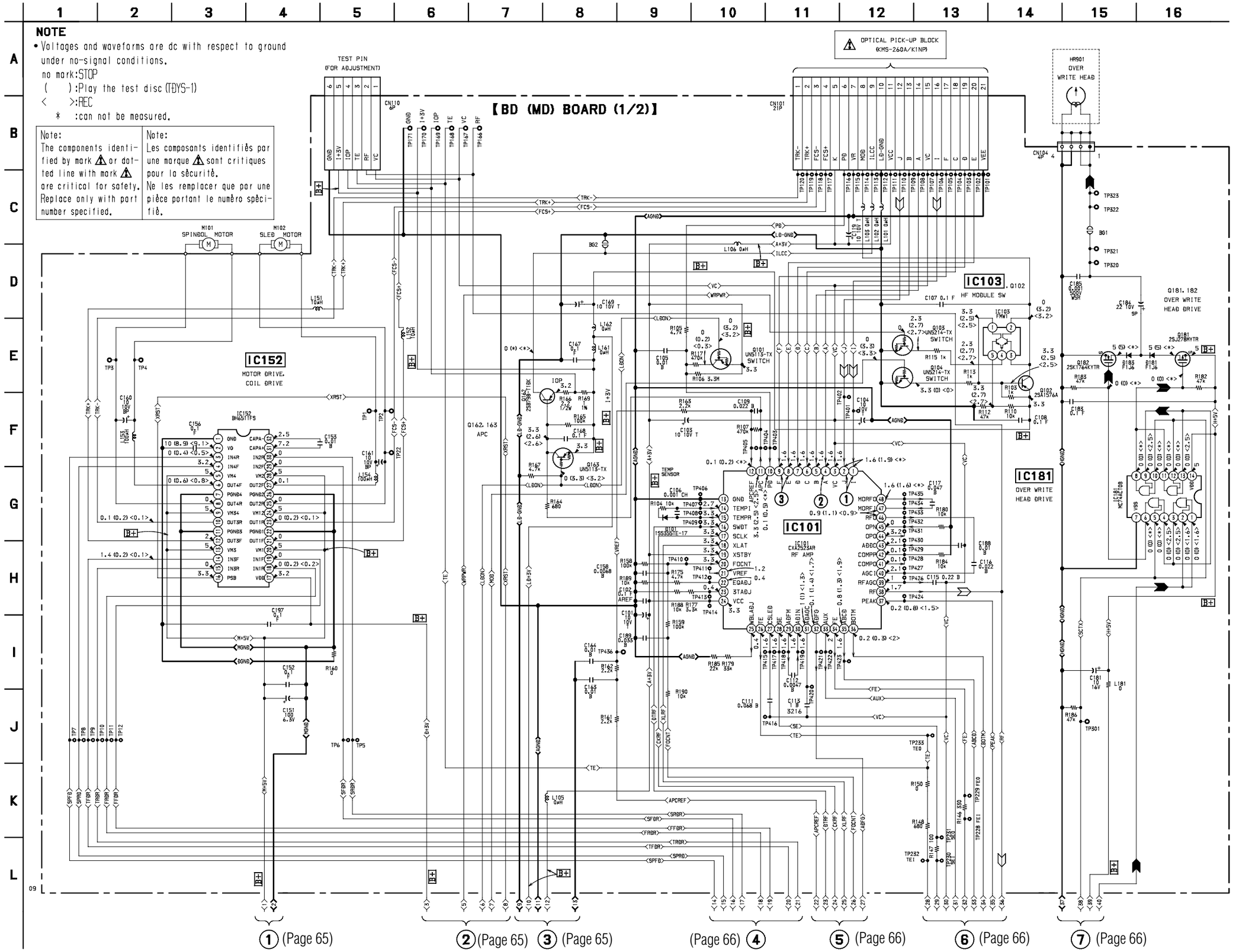


• Semiconductor Location

Ref. No.	Location
IC101	A-3
IC121	C-3
IC124	C-3
IC152	B-1
IC181	C-1
IC192	D-1
Q101	B-3
Q162	B-3
Q163	B-3
Q181	C-1
Q182	C-2

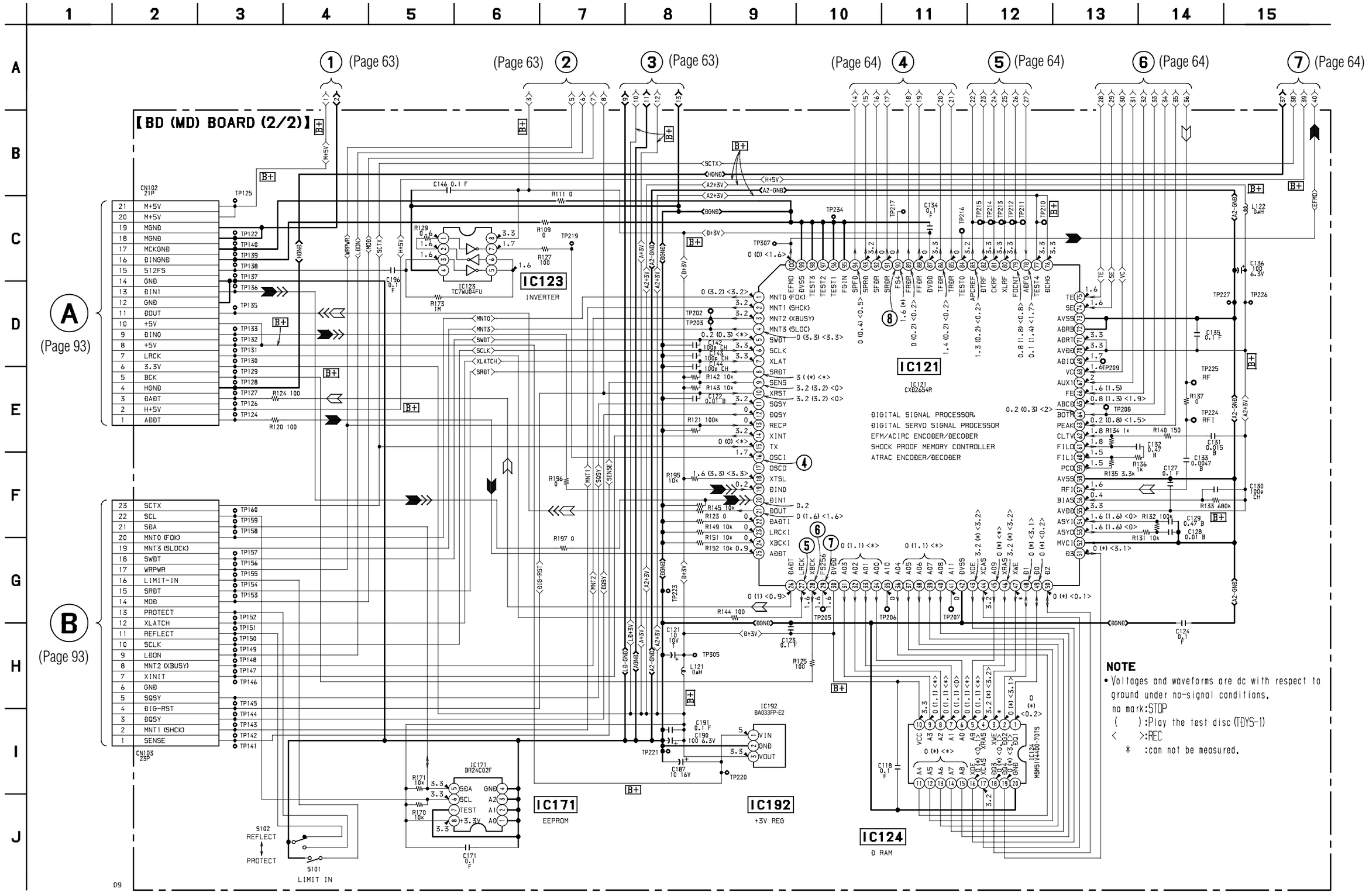
8-6. SCHEMATIC DIAGRAM – BD (MD) (1/2) SECTION –

• See page 56 for Waveforms. • See page 109 for IC Block Diagrams. • See page 112 for IC Pin Functions.


NOTE
• Voltages and waveforms are dc with respect to ground under no-signal conditions.
no mark:STOP
( ):Play the test disc (TDYS-1)
< >:REC
* :can not be measured.
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.
Note: Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
【BD (MD) BOARD (1/2)】
TEST PIN (FOR ADJUSTMENT)
CN110 6P
CN101 21P
OPTICAL PICK-UP BLOCK (KMS-260A/K1NP)
HR901 OVER WRITE HEAD
CN104 4P
M101 SPINDEL MOTOR
M102 SLED MOTOR
IC152 MOTOR DRIVE, COIL DRIVE
IC103 HF MODULE SW
IC101 RF AMP
IC181 OVER WRITE HEAD DRIVE
Q181, 182 OVER WRITE HEAD DRIVE
Q162, 163 APC
TEMP SENSOR
1 (Page 65)
2 (Page 65)
3 (Page 65)
(Page 66) 4
5 (Page 66)
6 (Page 66)
7 (Page 66)

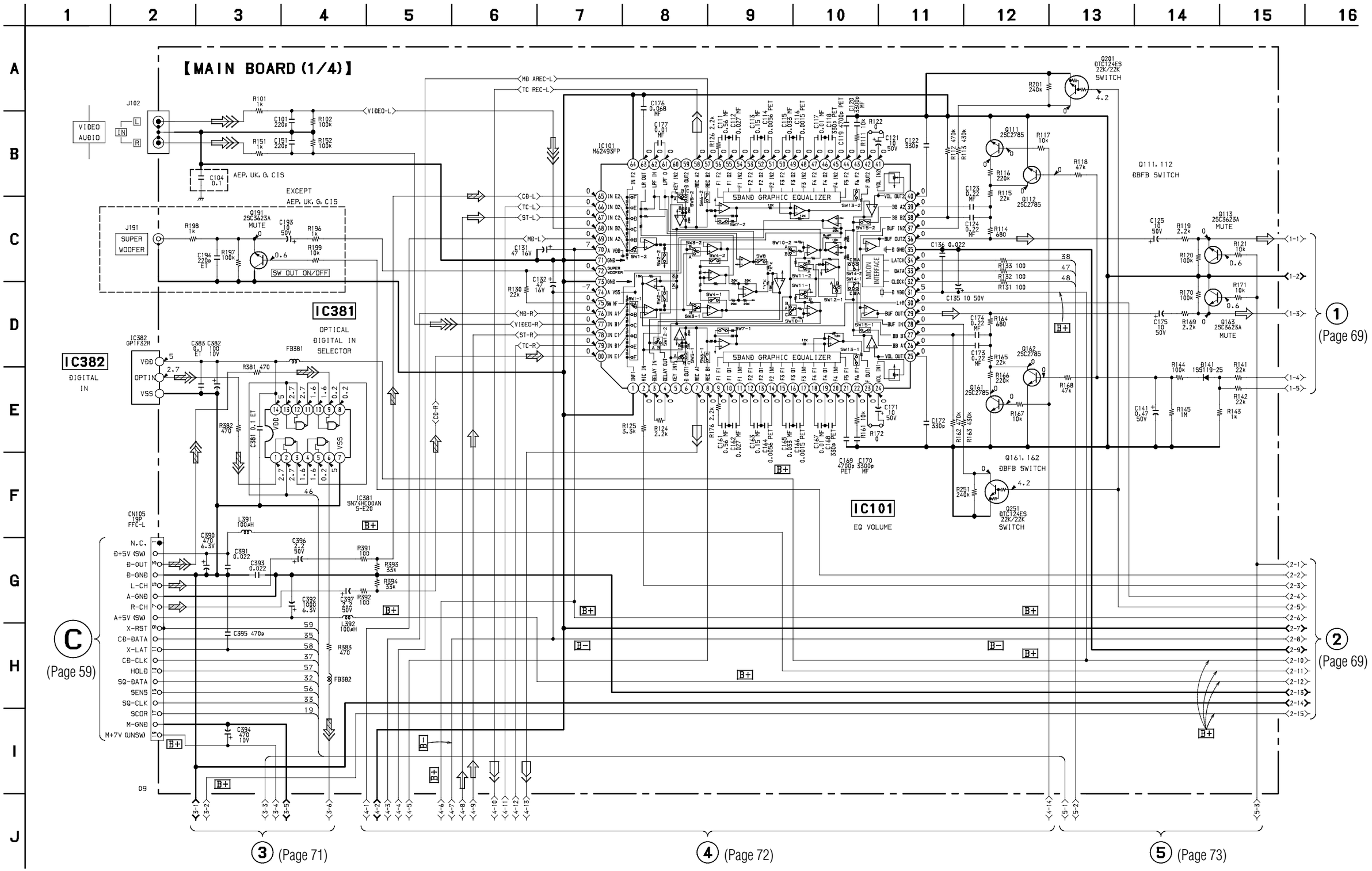
8-7. SCHEMATIC DIAGRAM – BD (MD) (2/2) SECTION –

• See page 56 for Waveforms. • See page 109 for IC Block Diagrams. • See page 113 for IC Pin Functions.



8-8. SCHEMATIC DIAGRAM – MAIN (1/4) SECTION –

• See page 75 for Printed Wiring Board.

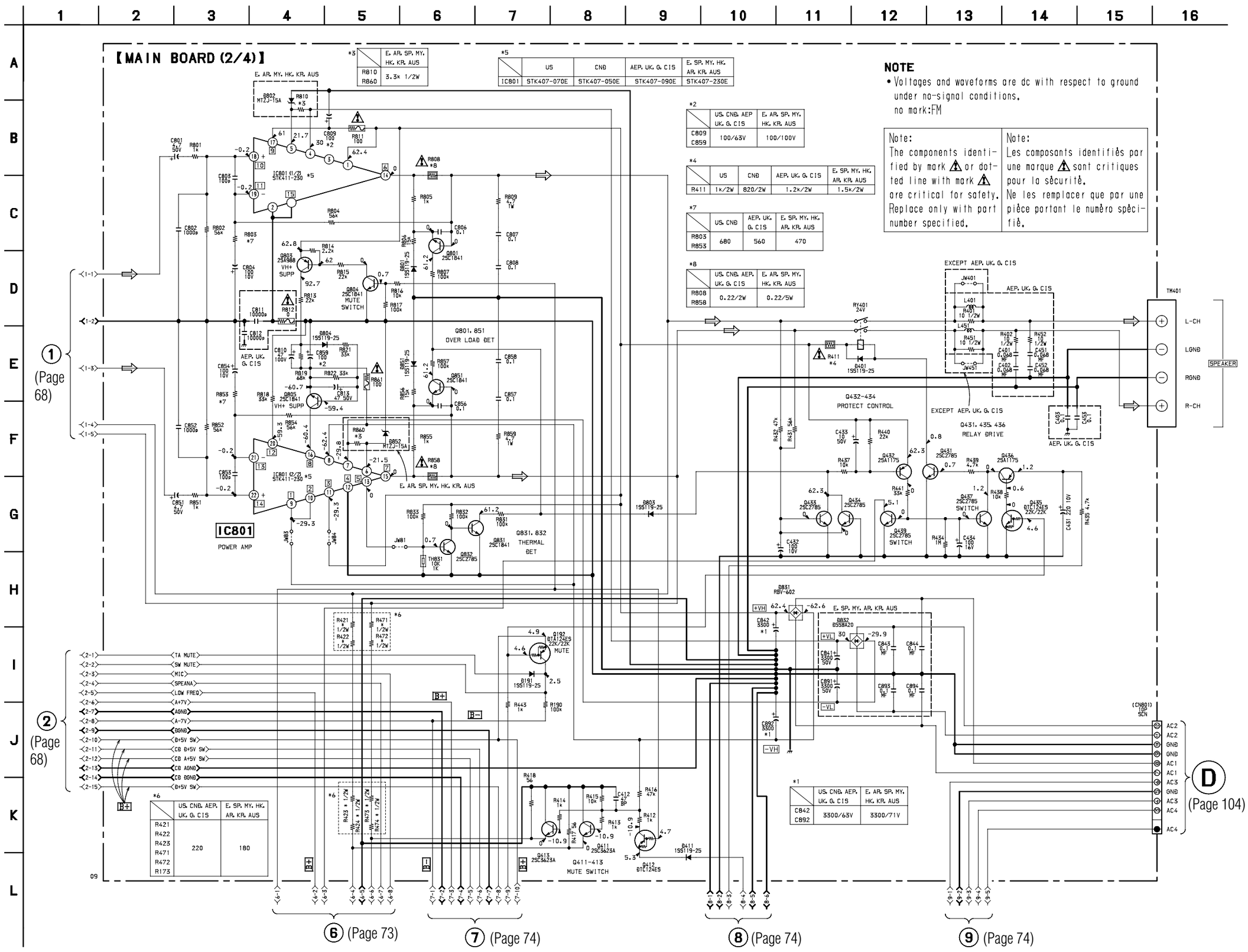


NOTE

- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark:FM

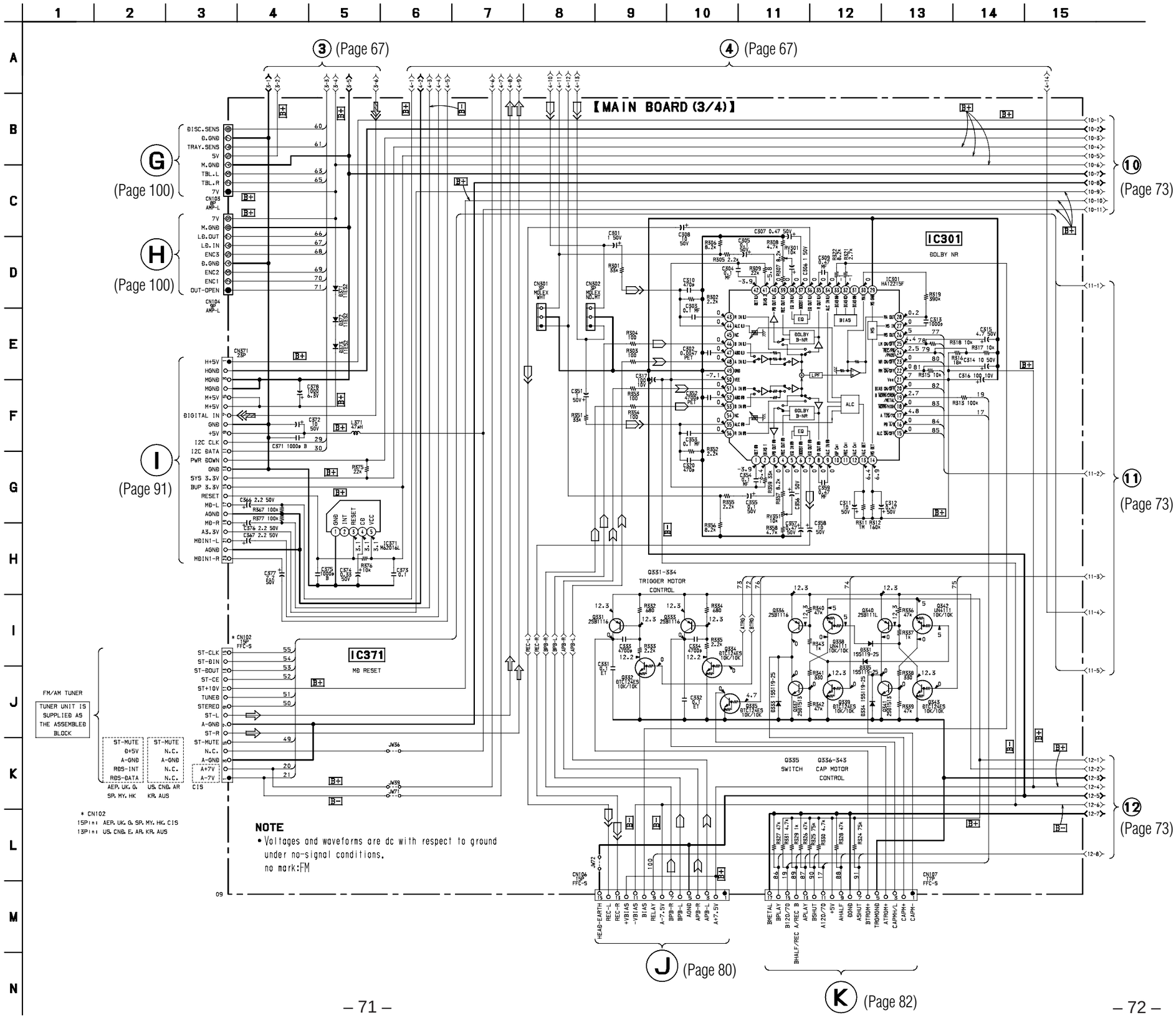
8-9. SCHEMATIC DIAGRAM – MAIN (2/4) SECTION –

• See page 75 for Printed Wiring Board.


【MAIN BOARD (2/4)】
NOTE
• Voltages and waveforms are dc with respect to ground under no-signal conditions, no mark:FM
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.
Note: Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
IC801
POWER AMP
IC801 (1/2) STK411-230 *5
IC801 (2/2) STK411-230 *5
Q801, 851 OVER LOAD DET
Q831, 832 THERMAL DET
Q411-413 MUTE SWITCH
Q432-434 PROTECT CONTROL
Q431, 435, 436 RELAY DRIVE
Q439 2SC2785 SWITCH
MUTE SWITCH
AEP, UK, G, CIS
EXCEPT AEP, UK, G, CIS
E, AR, SP, MY, HK, KR, AUS
RY401 24V
TM401
L-CH
LGND
RGND
R-CH
SPEAKER
(CN801) 10P SCN
AC2
AC2
GND
GND
AC1
AC1
AC3
GND
AC3
AC4
AC4
TA MUTE
SW MUTE
MIC
SPEANA
LOW FREQ
A+7V
AGND
A-7V
BGND
B+5V SW
CB B+5V SW
CB A+5V SW
CB AGND
CB BGND
B+5V SW
1 (Page 68)
2 (Page 68)
D (Page 104)
6 (Page 73)
7 (Page 74)
8 (Page 74)
9 (Page 74)
*1 C842, C892: US, CND, AEP, UK, G, CIS: 3300/63V; E, AR, SP, MY, HK, KR, AUS: 3300/71V
*2 C809, C859: US, CND, AEP UK, G, CIS: 100/63V; E, AR, SP, MY, HK, KR, AUS: 100/100V
*3 R810, R860: E, AR, SP, MY, HK, KR, AUS: 3.3k 1/2W
*4 R411: US: 1k/2W; CND: 820/2W; AEP, UK, G, CIS: 1.2k/2W; E, SP, MY, HK, AR, KR, AUS: 1.5k/2W
*5 IC801: US: STK407-070E; CND: STK407-050E; AEP, UK, G, CIS: STK407-090E; E, SP, MY, HK, AR, KR, AUS: STK407-230E
*6 R421, R422, R423, R471, R472, R173: US, CND, AEP, UK, G, CIS: 220; E, SP, MY, HK, AR, KR, AUS: 180
*7 R803, R853: US, CND: 680; AEP, UK, G, CIS: 560; E, SP, MY, HK, AR, KR, AUS: 470
*8 R808, R858: US, CND, AEP, UK, G, CIS: 0.22/2W; E, AR, SP, MY, HK, KR, AUS: 0.22/5W

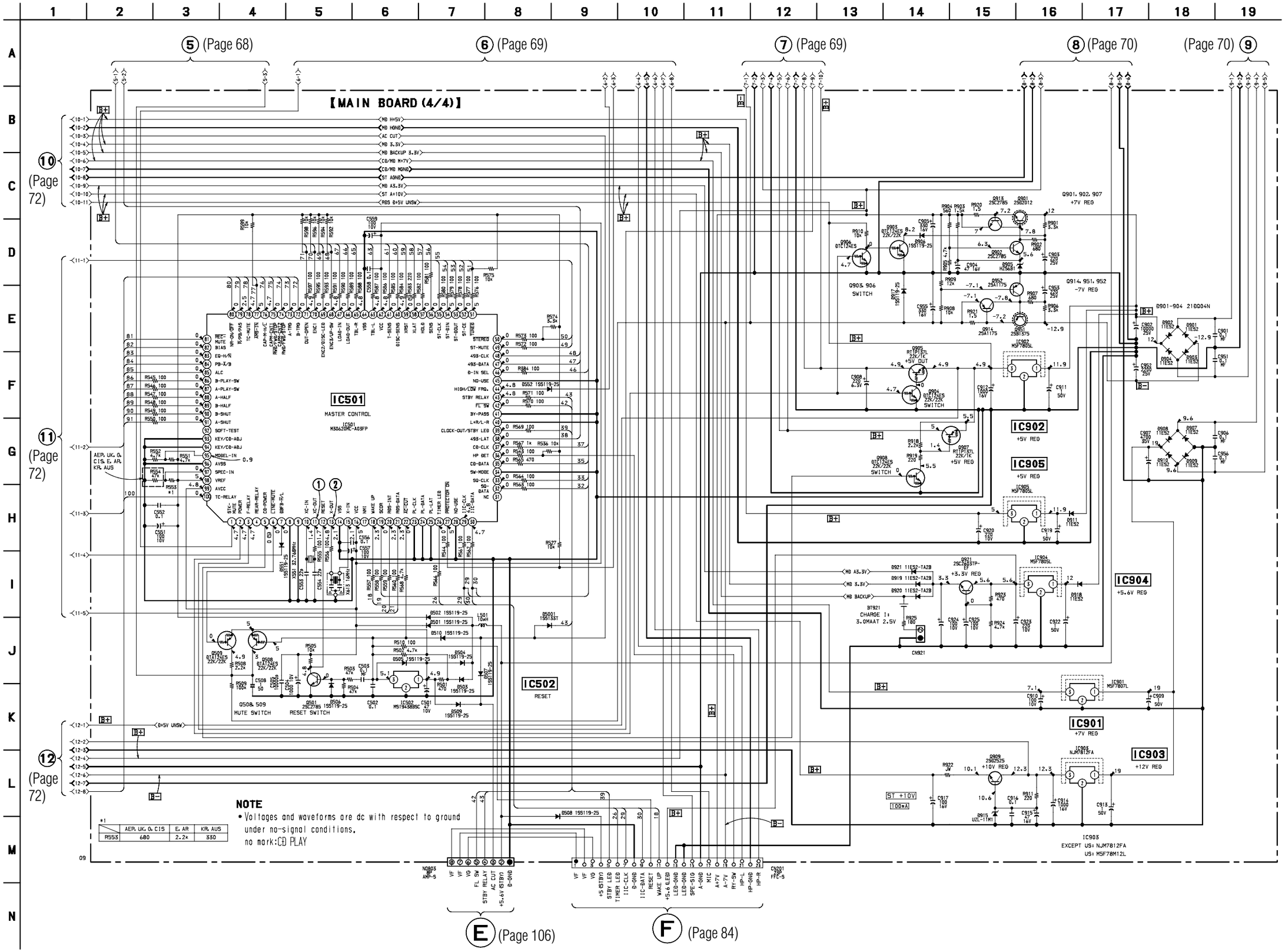
8-10. SCHEMATIC DIAGRAM – MAIN (3/4) SECTION –

- **See page 56 for Waveforms.**
- **See page 75 for Printed Wiring Board.**
- **See page 111 for IC Block Diagrams.**



8-11. SCHEMATIC DIAGRAM – MAIN (4/4) SECTION –

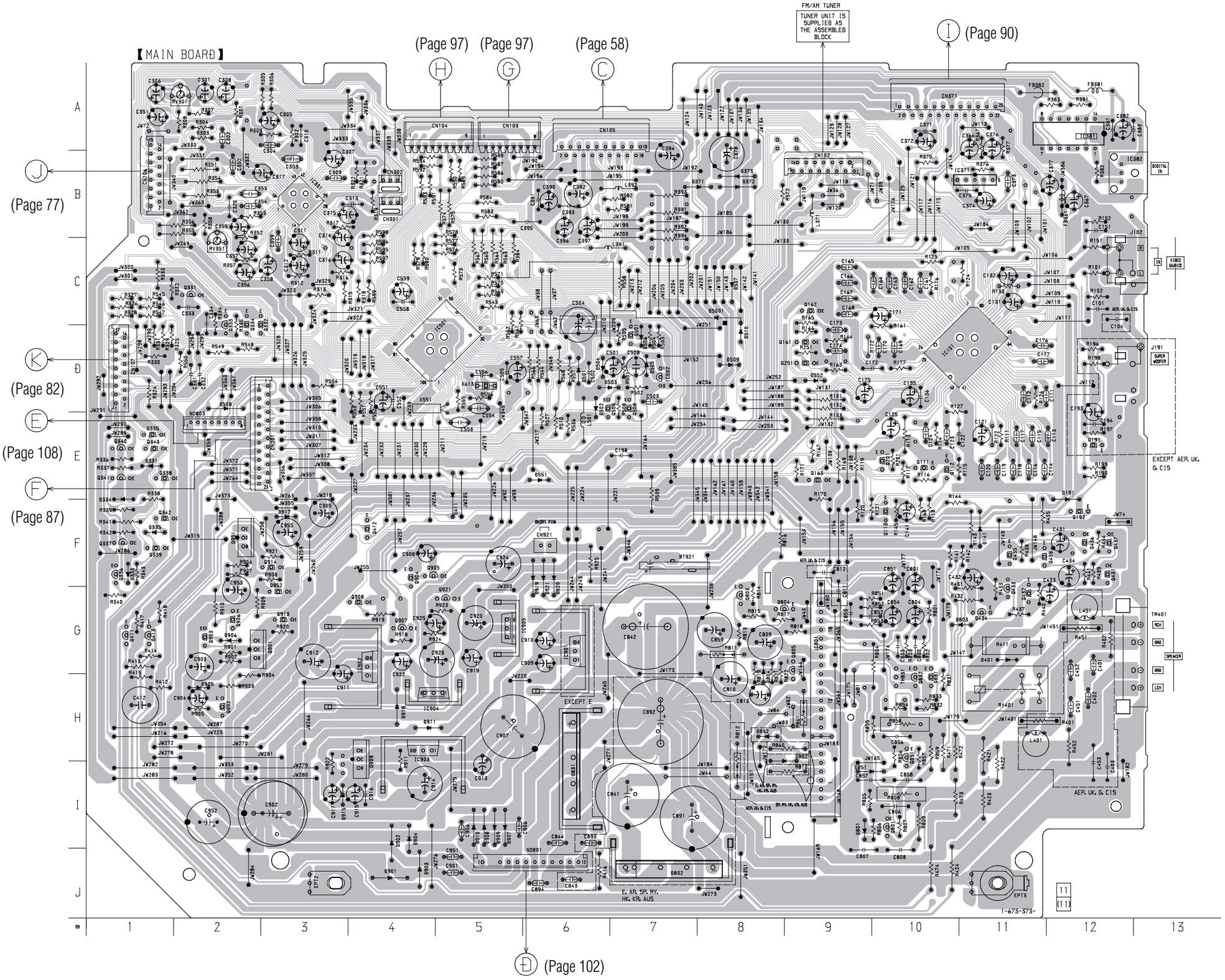
- See page 75 for Printed Wiring Board.
- See page 116 for IC Pin Functions.



*1	AEP, UK, G, CIS	E, AR	KR, AUS
R553	680	2.2k	330

8-12. PRINTED WIRING BOARD – MAIN SECTION –

• See page 40 for Circuit Boards Location.



– 75 –

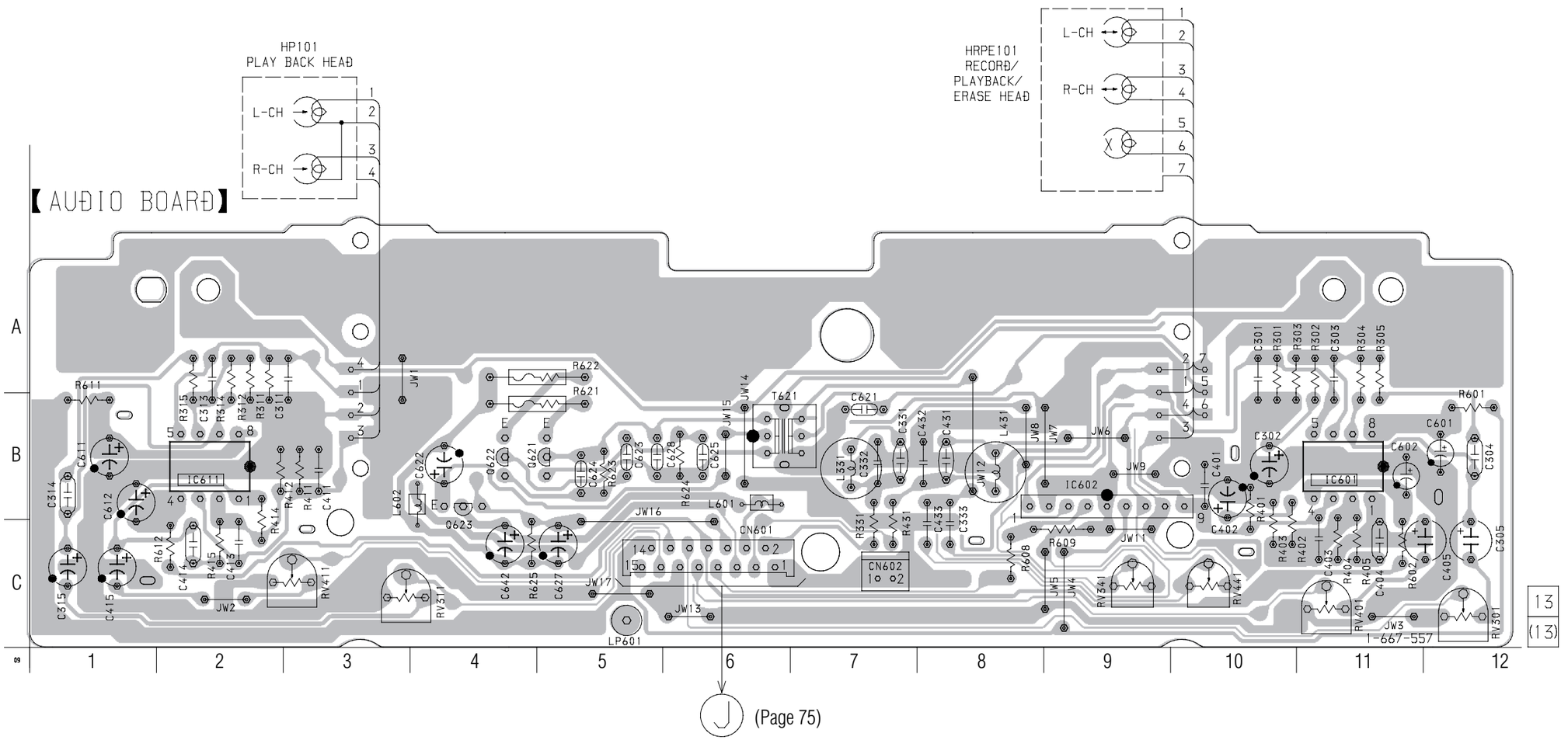
• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D141	F-11	IC905	G-5
D191	F-12		
D331	E-1	Q111	E-10
D333	F-1	Q112	E-10
D334	F-1	Q113	F-10
D335	F-1	Q161	D-10
D371	B-8	Q162	C-9
D372	B-8	Q163	E-9
D373	B-8	Q191	E-12
D401	G-11	Q192	F-12
D411	F-5	Q201	E-10
D501	D-6	Q251	D-10
D502	D-6	Q331	C-2
D503	D-7	Q332	C-2
D504	D-6	Q333	C-2
D505	D-7	Q334	C-2
D506	D-7	Q335	E-1
D507	C-8	Q336	F-1
D508	D-2	Q337	F-1
D509	D-8	Q338	E-1
D510	D-8	Q339	F-1
D551	E-6	Q340	E-1
D552	D-10	Q341	E-1
D801	I-9	Q342	F-1
D802	H-9	Q343	E-1
D803	G-11	Q411	G-1
D804	H-8	Q412	F-4
D831	I-6	Q413	G-1
D832	J-7	Q431	F-12
D851	I-10	Q432	G-11
D852	H-8	Q433	G-11
D901	J-4	Q434	G-11
D902	I-4	Q435	F-11
D903	J-4	Q436	F-12
D904	I-4	Q437	F-12
D905	H-2	Q439	F-12
D906	G-2	Q501	D-7
D907	I-5	Q508	D-7
D908	I-5	Q509	D-7
D909	I-5	Q801	I-10
D910	I-5	Q803	G-8
D911	H-4	Q804	G-9
D915	I-3	Q805	G-9
D917	F-3	Q831	H-10
D918	H-4	Q832	H-10
D919	F-6	Q851	H-10
D920	F-6	Q901	G-2
D921	F-6	Q902	H-2
		Q903	G-2
IC101	D-10	Q904	F-4
IC301	B-3	Q905	F-4
IC371	B-11	Q906	G-2
IC381	A-12	Q907	G-4
IC382	B-13	Q908	G-4
IC501	D-5	Q909	H-4
IC502	D-7	Q913	G-3
IC801	G-9	Q914	F-3
IC901	G-6	Q921	G-5
IC902	G-4	Q951	F-2
IC903	H-4	Q952	G-3
IC904	H-4		

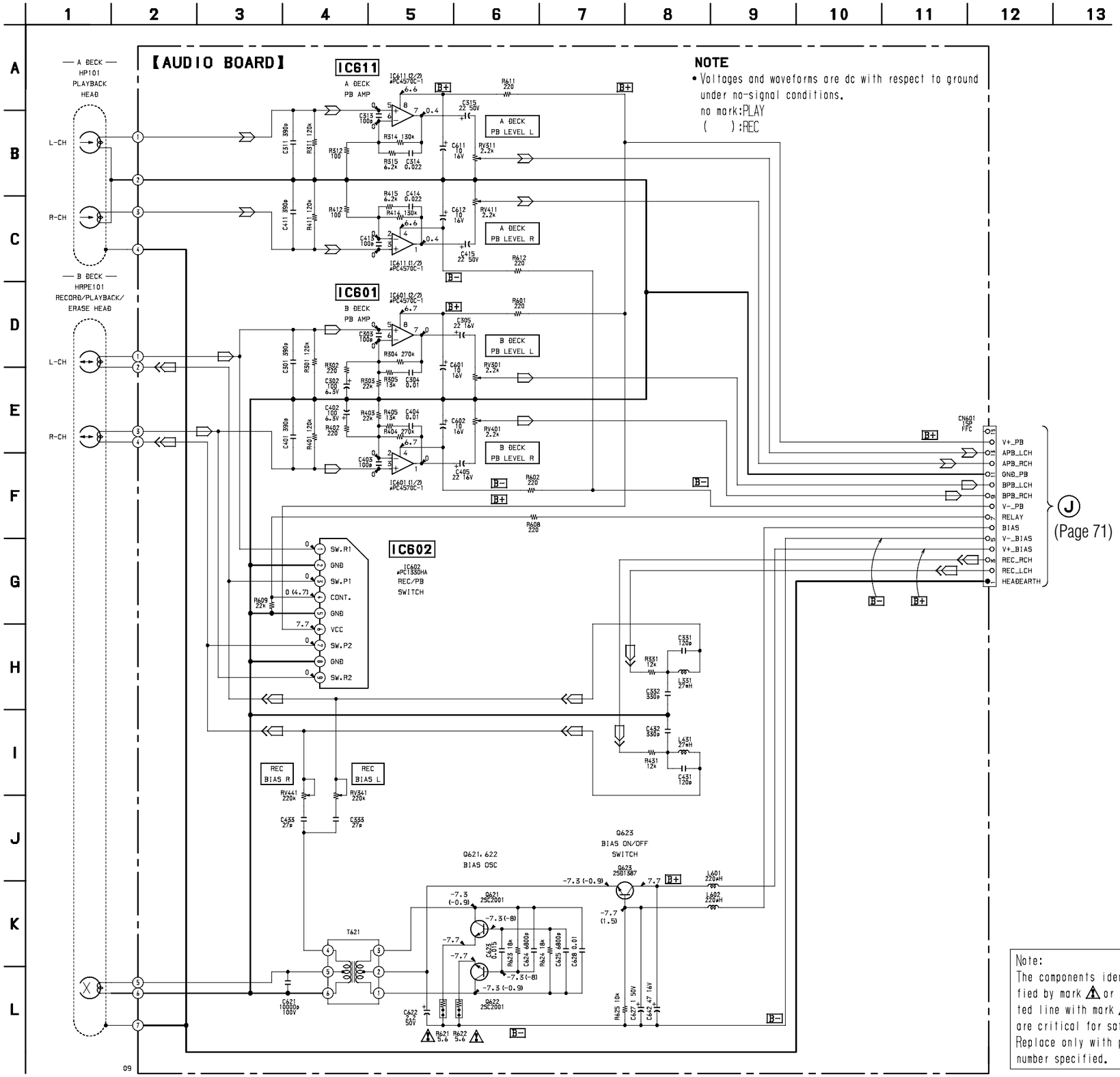
– 76 –

8-13. PRINTED WIRING BOARD – DECK SECTION –

• See page 40 for Circuit Boards Location.



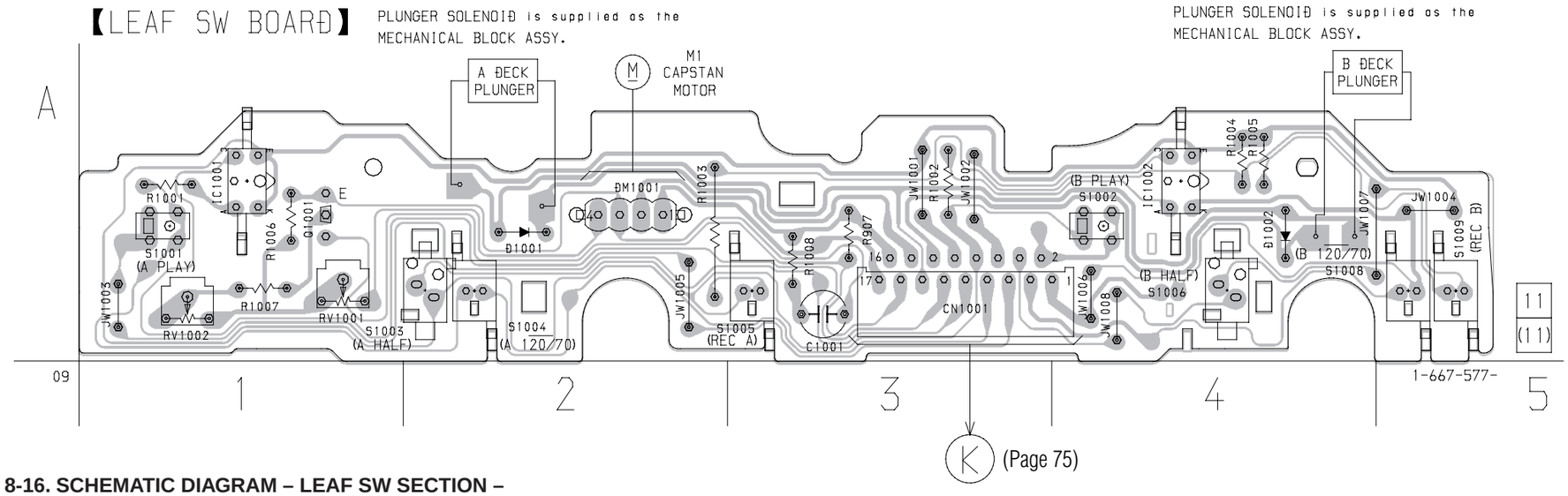
8-14. SCHEMATIC DIAGRAM – DECK SECTION –



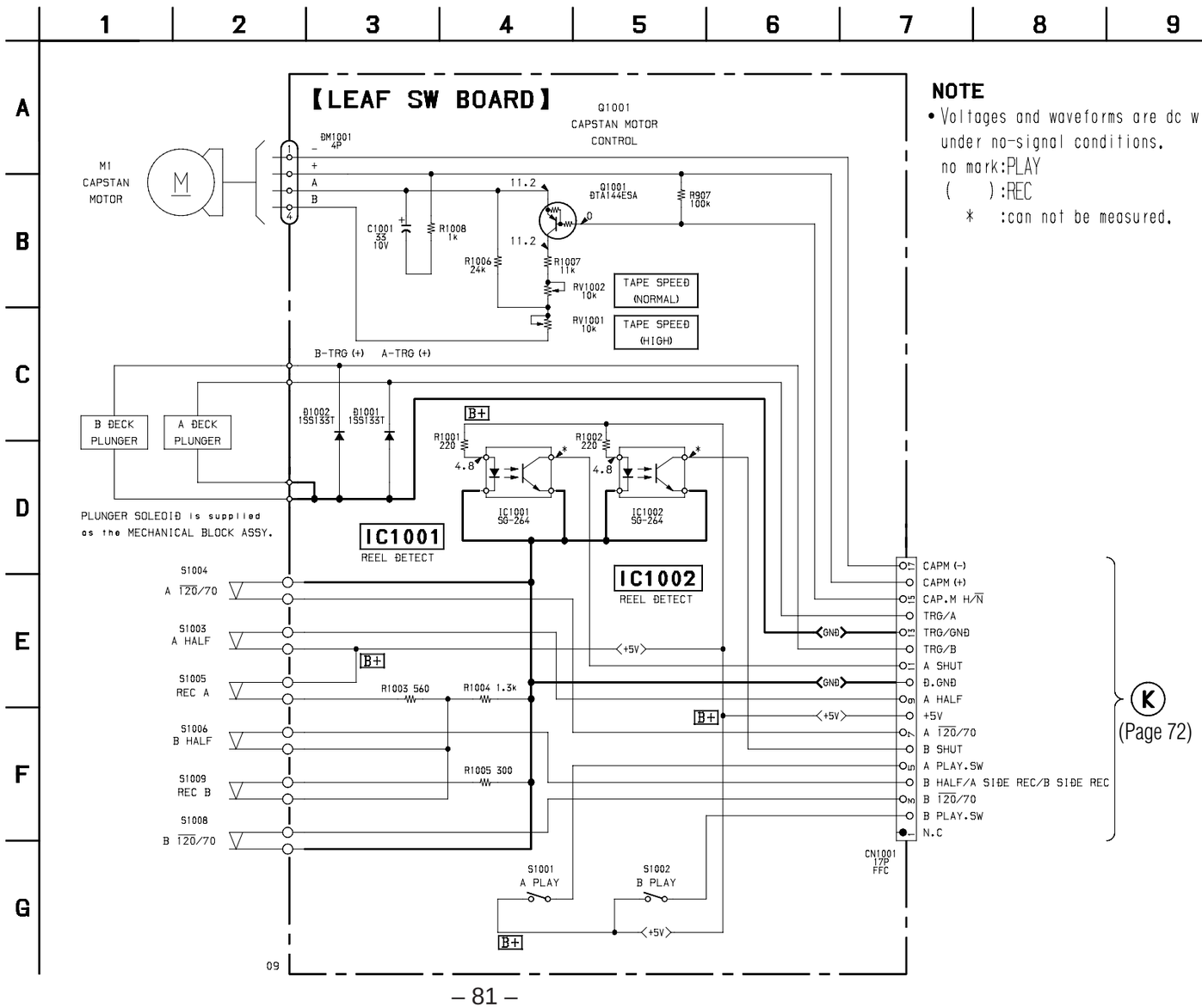
Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

8-15. PRINTED WIRING BOARD – LEAF SW SECTION –

• See page 40 for Circuit Boards Location.



8-16. SCHEMATIC DIAGRAM – LEAF SW SECTION –

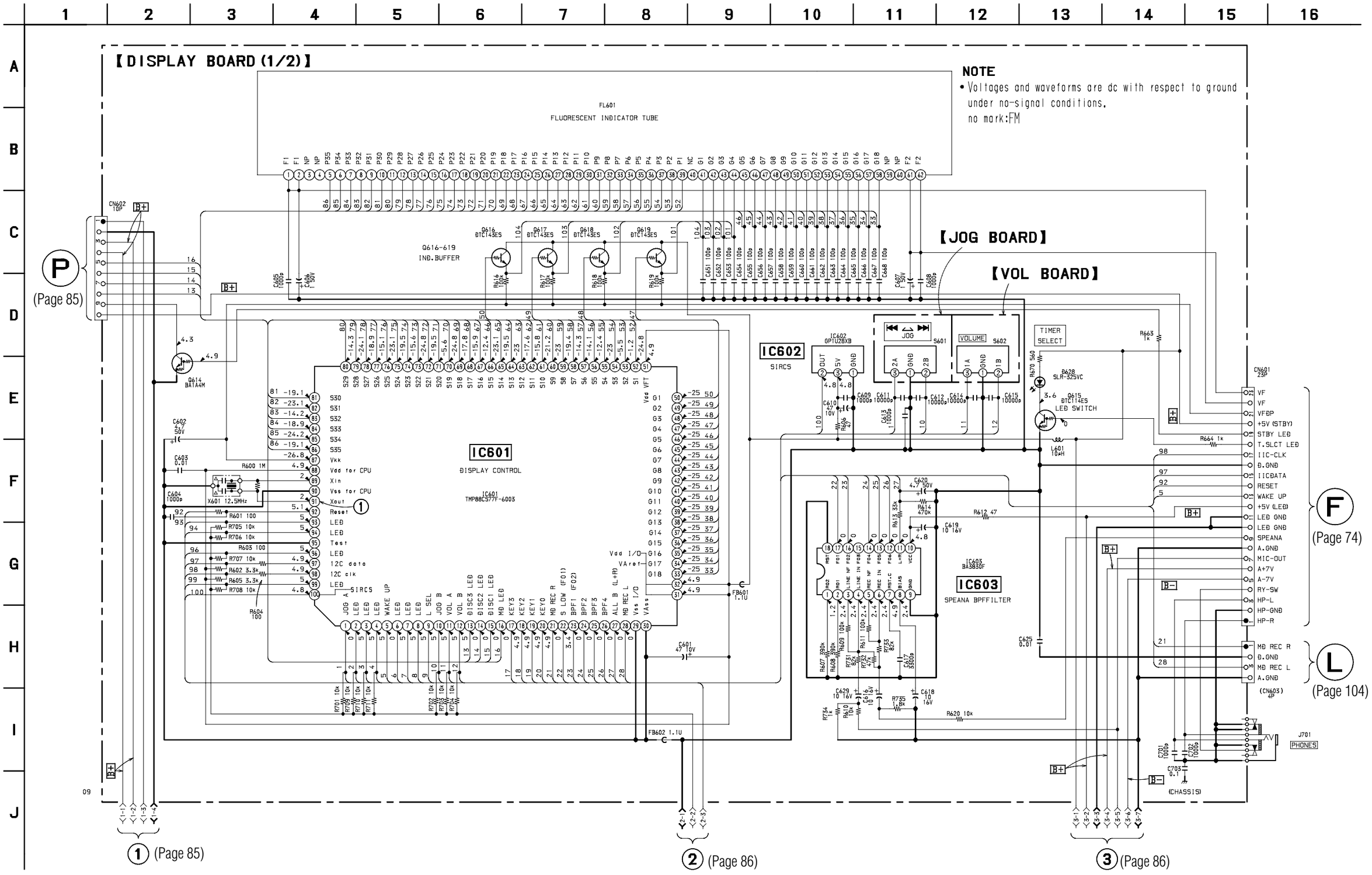


NOTE

- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark:PLAY
  ( ):REC
  * :can not be measured.

8-17. SCHEMATIC DIAGRAM – DISPLAY (1/2) SECTION –

- **See page 87 for Printed Wiring Board.**
- **See page 111 for IC Block Diagrams.**
- **See page 118 for IC Pin Functions.**



8-18. SCHEMATIC DIAGRAM – DISPLAY (2/2) SECTION –

NOTE

- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark:FM

【CD PANEL BOARD】

【MD LINK SW BOARD】

【POWER SW BOARD】

【DISPLAY BOARD (2/2)】

IC712
MIC AMP

Q751-754
LED SWITCH

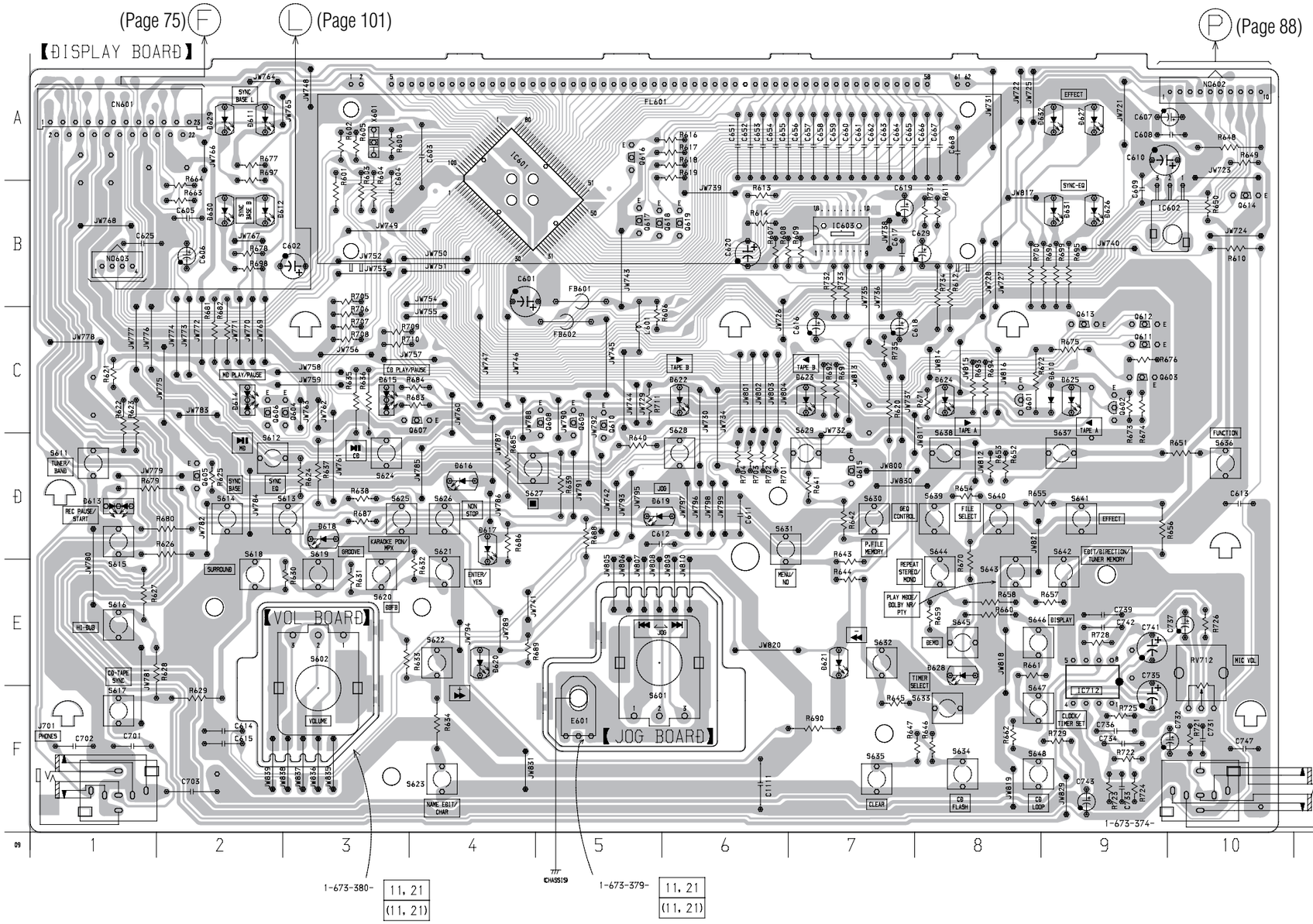
Q601-603
LED SWITCH

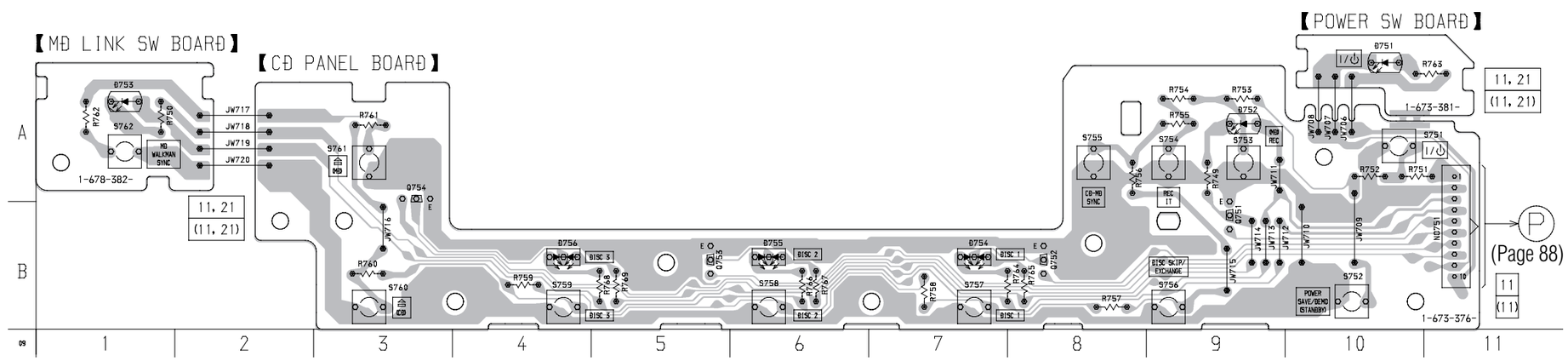
Q604-613
LED SWITCH

P (Page 83)
1 (Page 83)
2 (Page 83)
3 (Page 84)

8-19. PRINTED WIRING BOARD – DISPLAY SECTION –

• See page 40 for Circuit Boards Location.





• Semiconductor Location

Ref. No.	Location
D610	C-9
D611	A-2
D612	B-2
D613	D-1
D614	C-2
D615	C-3
D616	D-4
D617	D-4
D618	D-3
D619	D-6
D620	E-4
D621	E-7
D622	C-6
D623	C-7
D624	C-8
D625	C-9
D626	B-9
D627	A-9
D628	E-8
D629	A-2
D630	B-2
D631	B-9
D632	A-9
IC601	A-4
IC602	B-10
IC603	B-7
IC712	E-9
Q601	C-8
Q602	C-9
Q603	C-9
Q604	C-3
Q605	D-2
Q606	C-2
Q607	C-4
Q608	C-5
Q609	C-5
Q610	C-5
Q611	C-9
Q612	C-9
Q613	C-9
Q614	B-10
Q615	D-7
Q616	A-5
Q617	B-5
Q618	B-6
Q619	B-6

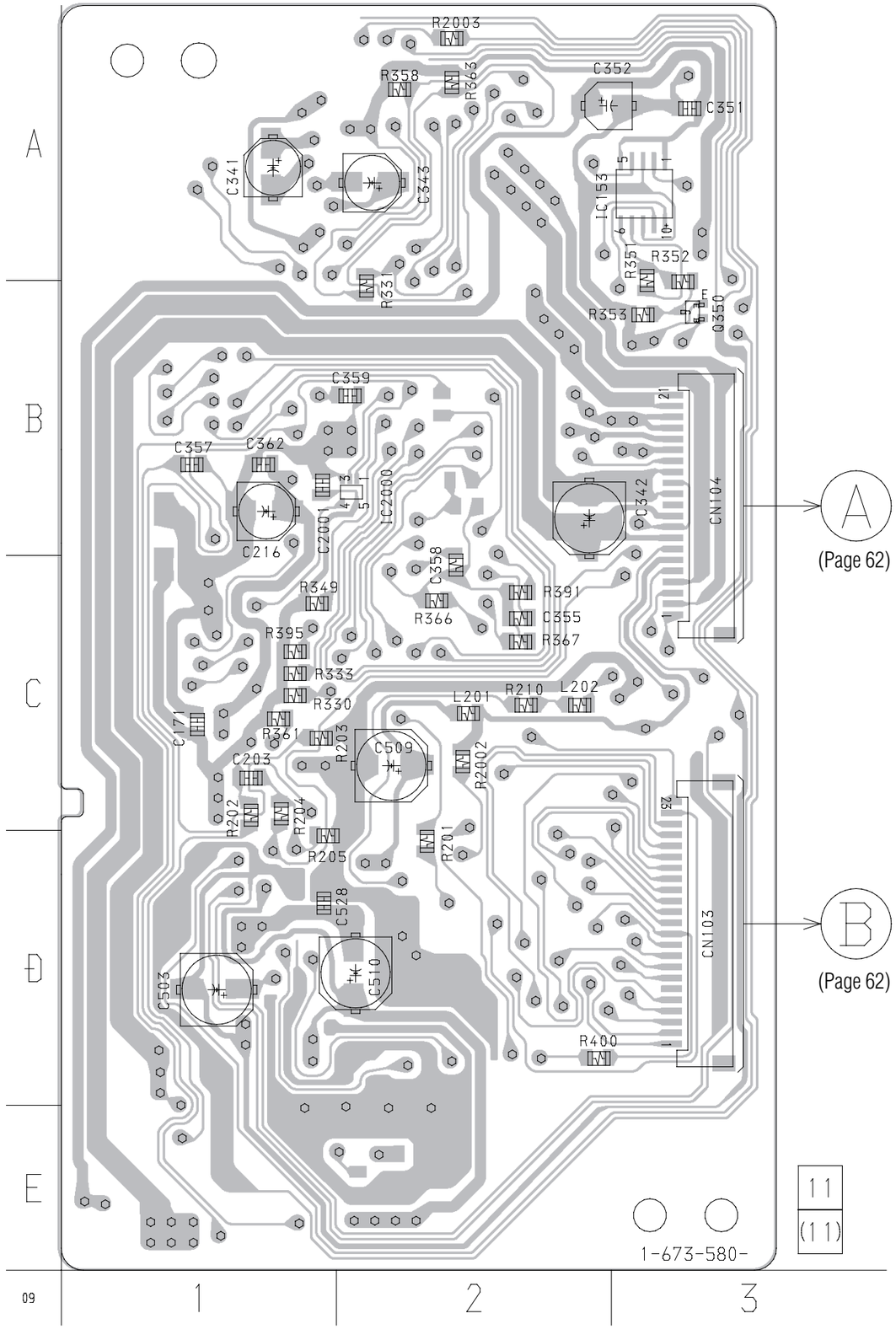
• Semiconductor Location

Ref. No.	Location
D751	A-10
D752	A-9
D753	A-1
D754	B-7
D755	B-6
D756	B-4
Q751	B-9
Q752	B-8
Q753	B-5
Q754	A-3

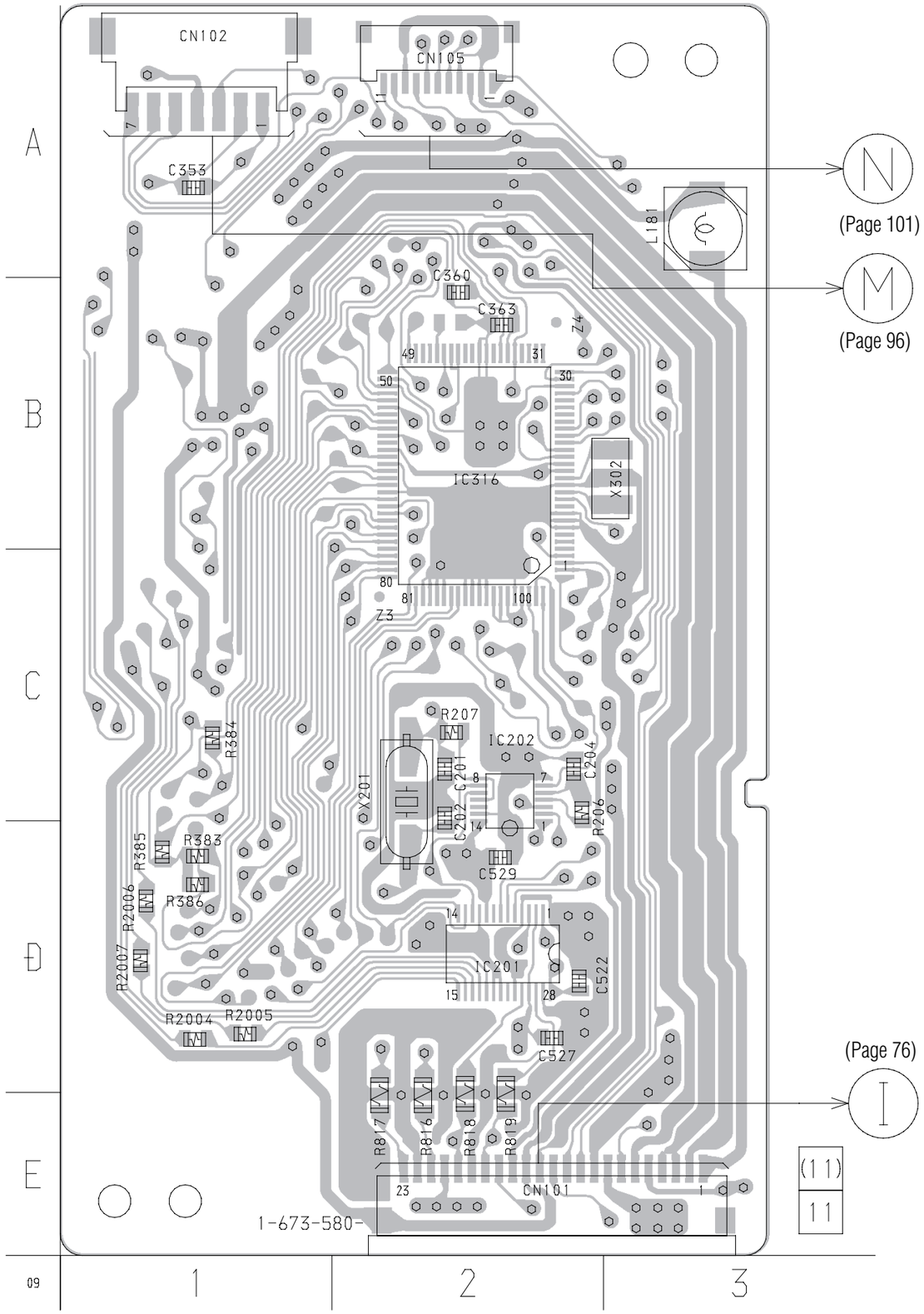
8-20. PRINTED WIRING BOARD – MD DIGITAL SECTION –

• See page 40 for Circuit Boards Location.

【MD DIGITAL BOARD】(SIDE A)

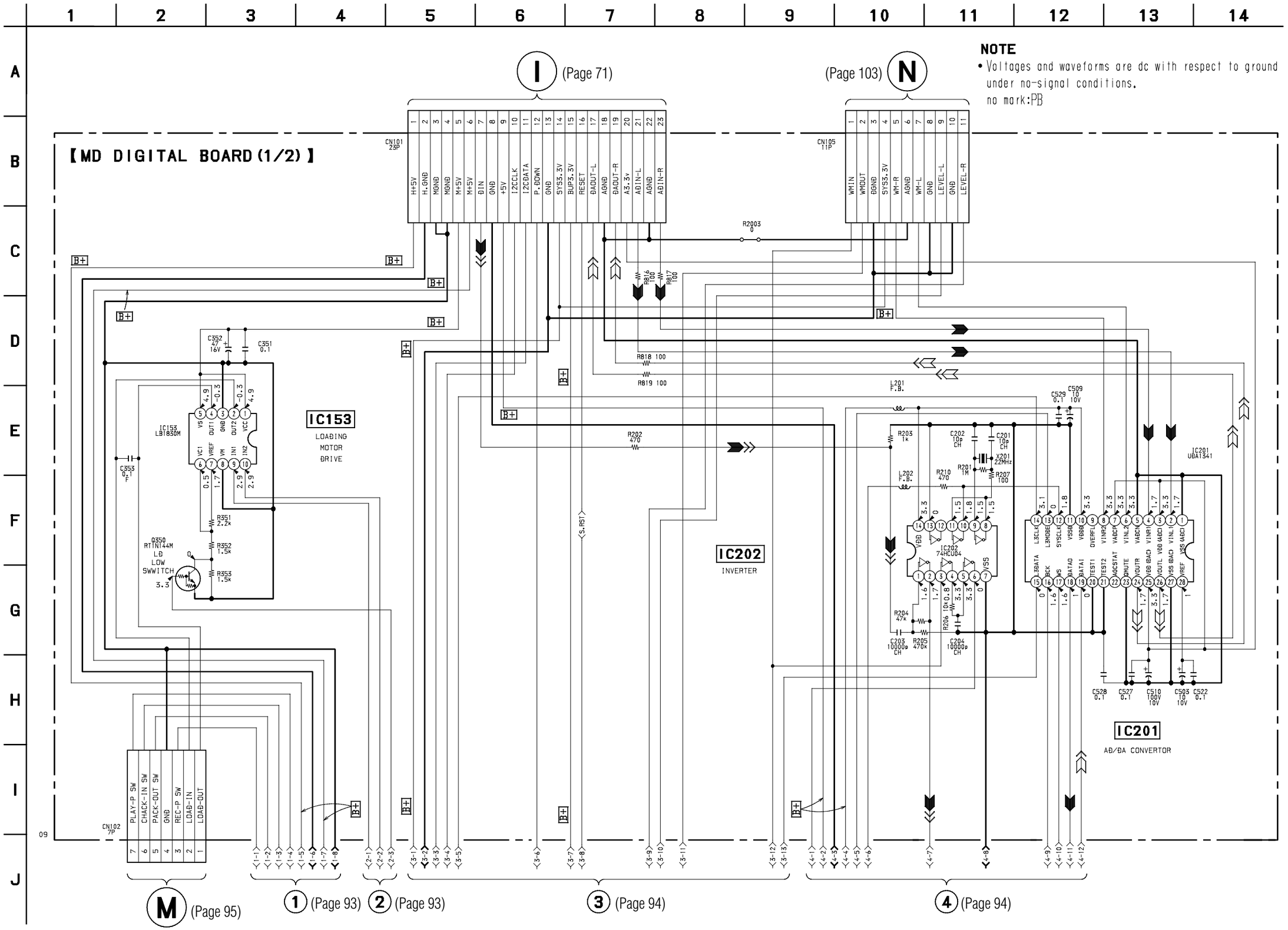


【MD DIGITAL BOARD】(SIDE B)



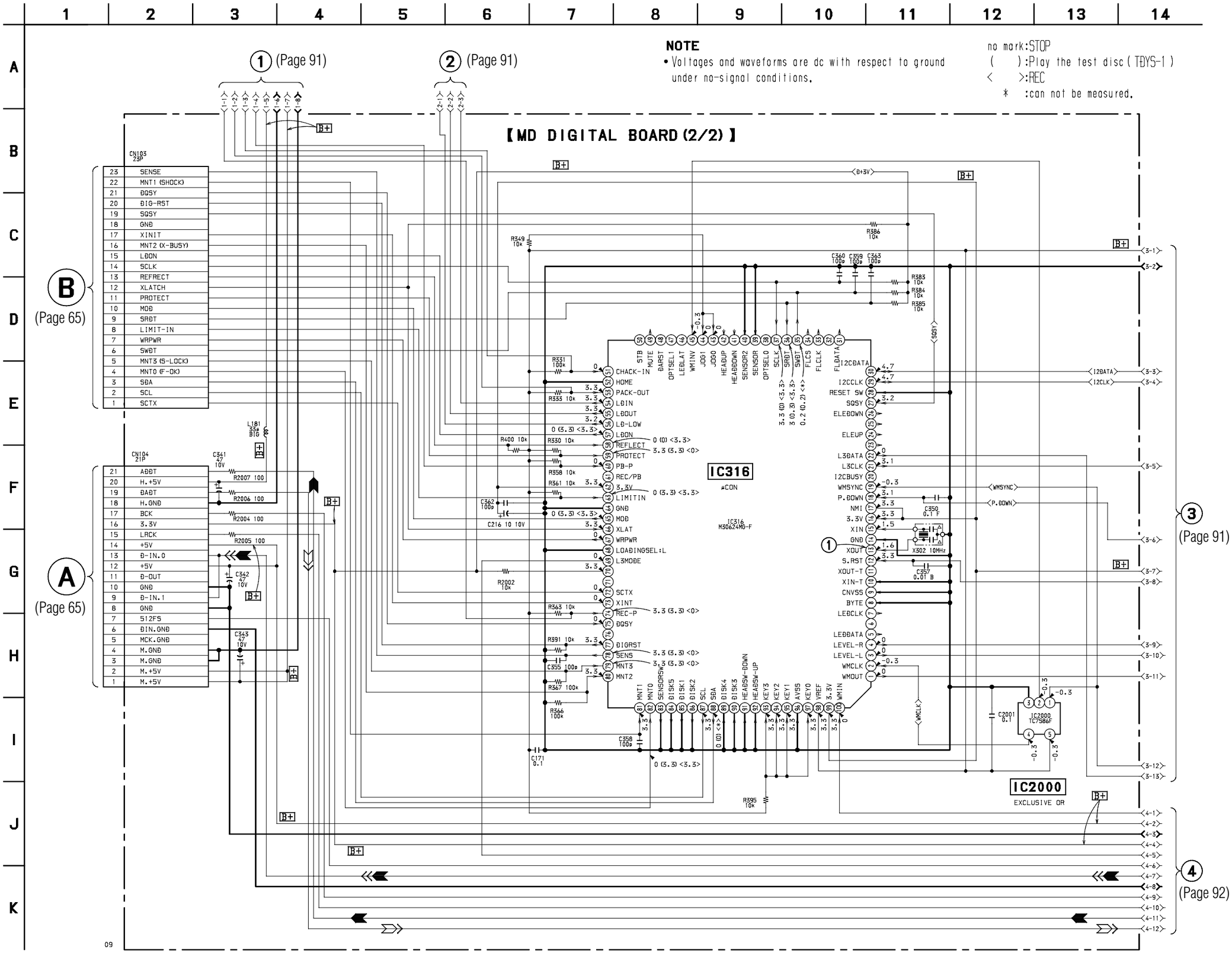
8-21. SCHEMATIC DIAGRAM – MD DIGITAL (1/2) SECTION –

• See page 111 for IC Block Diagrams.

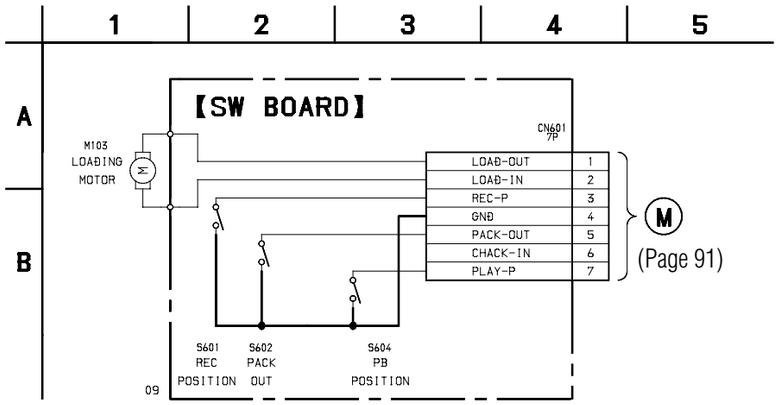


8-22. SCHEMATIC DIAGRAM – MD DIGITAL (2/2) SECTION –

• See page 89 for Printed Wiring Board.

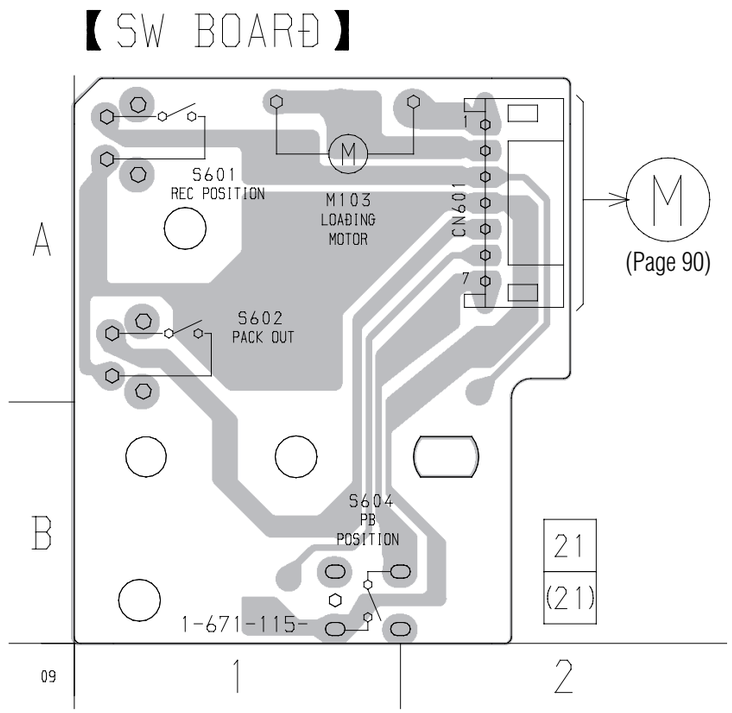


8-23. SCHEMATIC DIAGRAM – BD SWITCH SECTION –



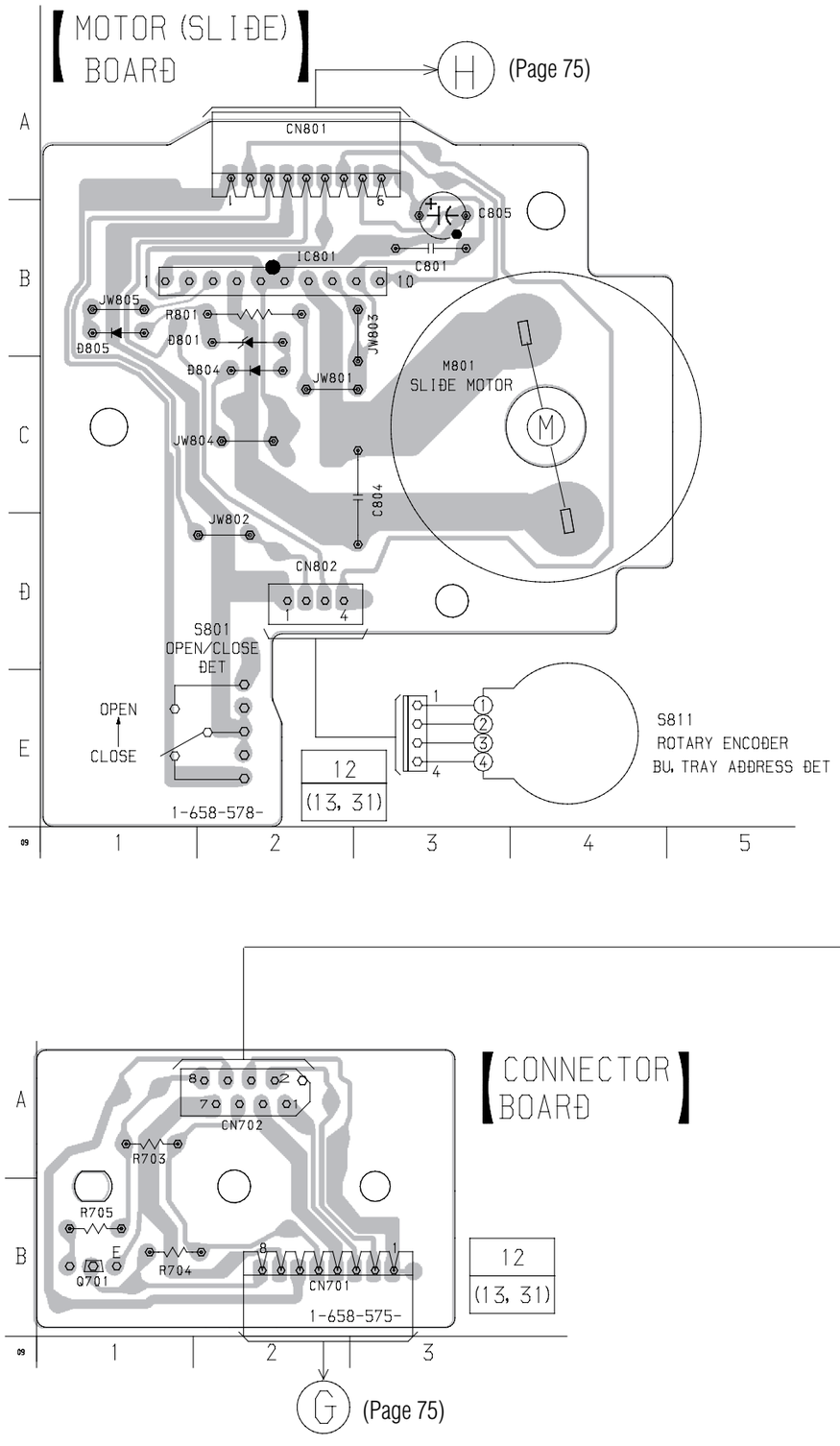
8-24. PRINTED WIRING BOARD – BD SWITCH SECTION –

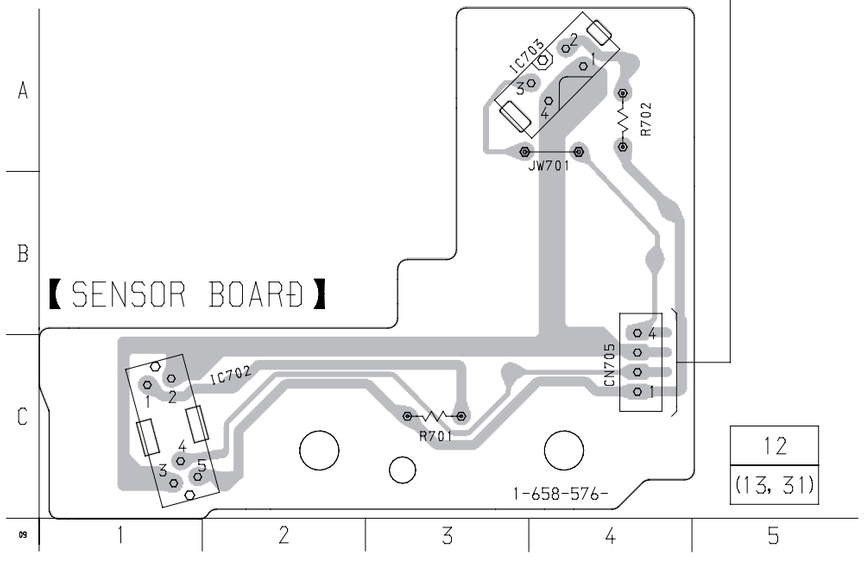
• See page 40 for Circuit Boards Location.



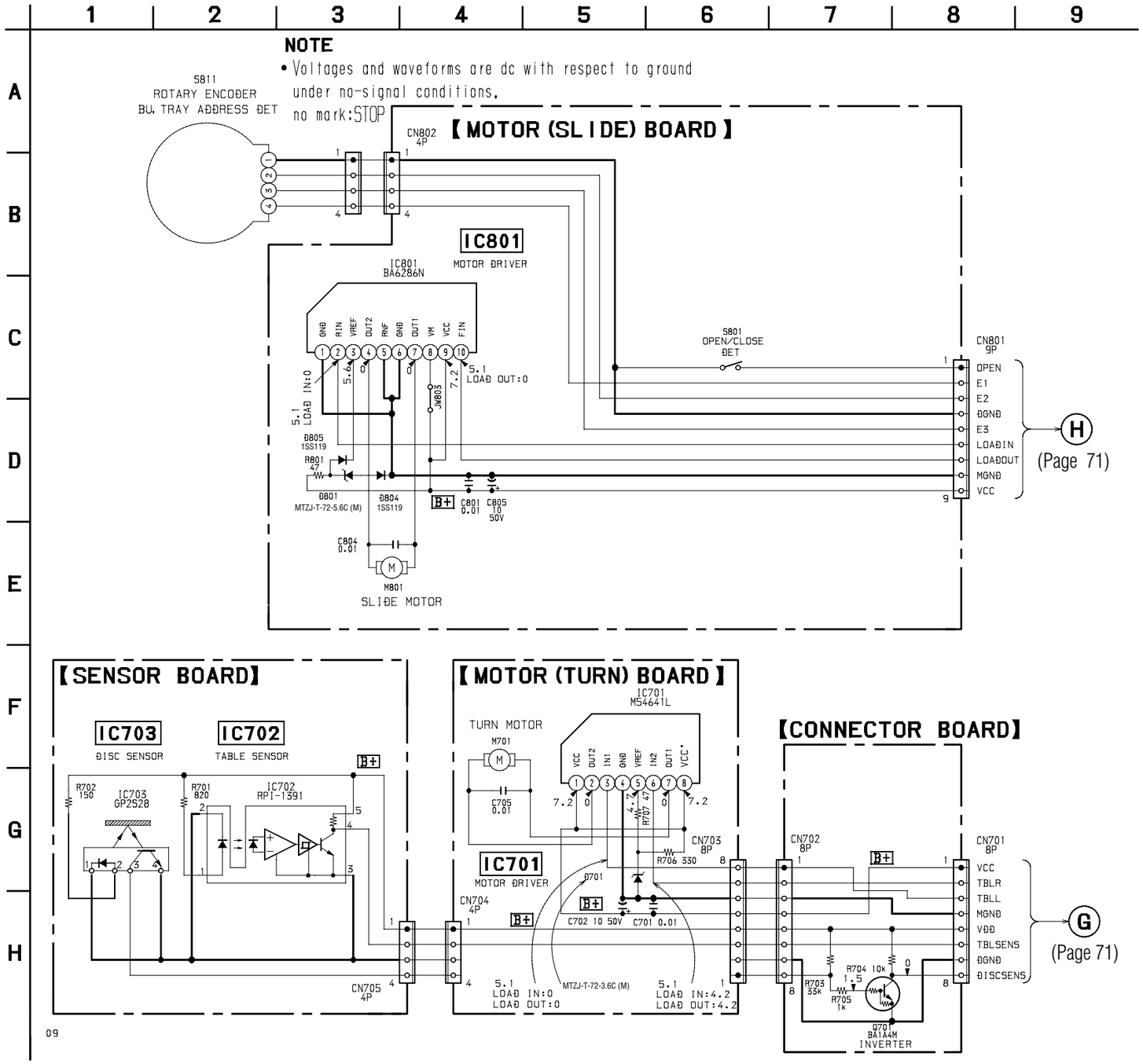
8-25. PRINTED WIRING BOARD – CD MOTOR SECTION –

• See page 40 for Circuit Boards Location.



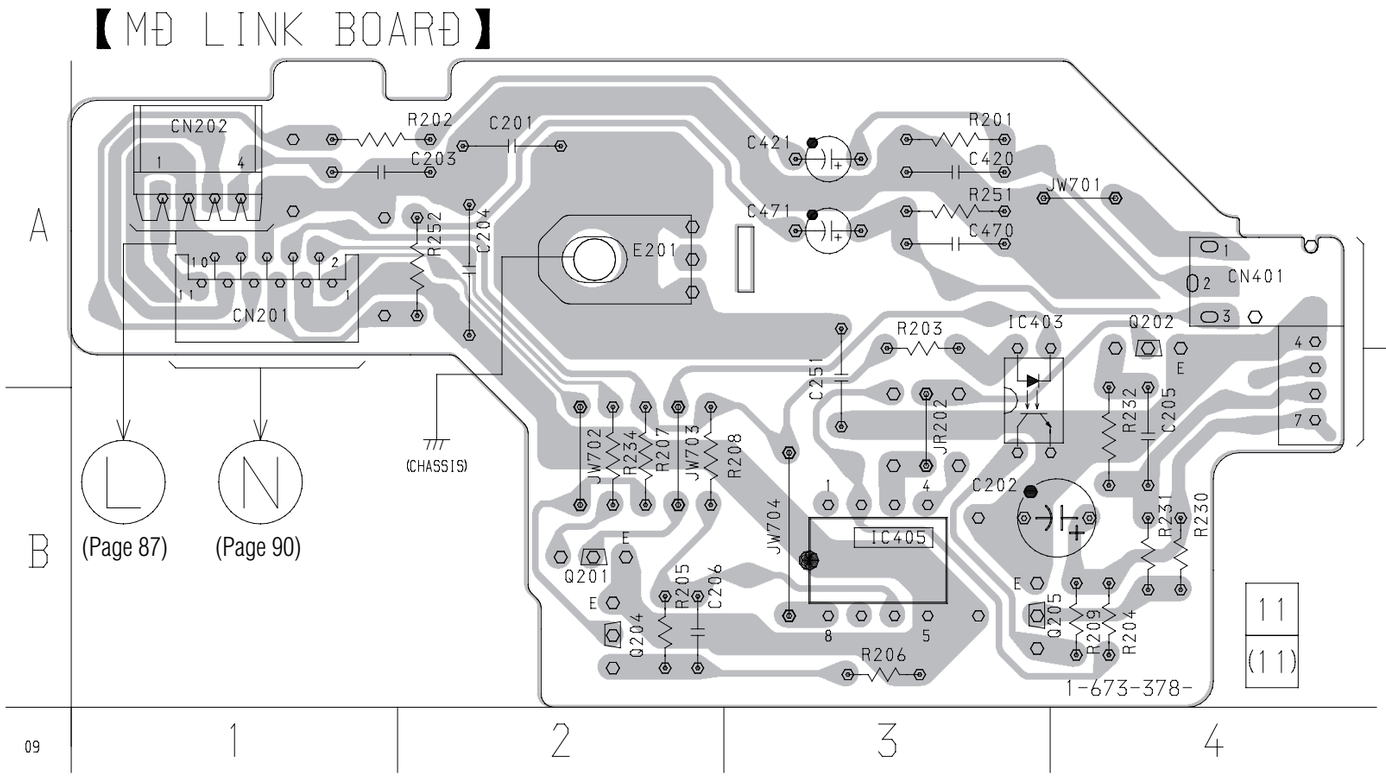


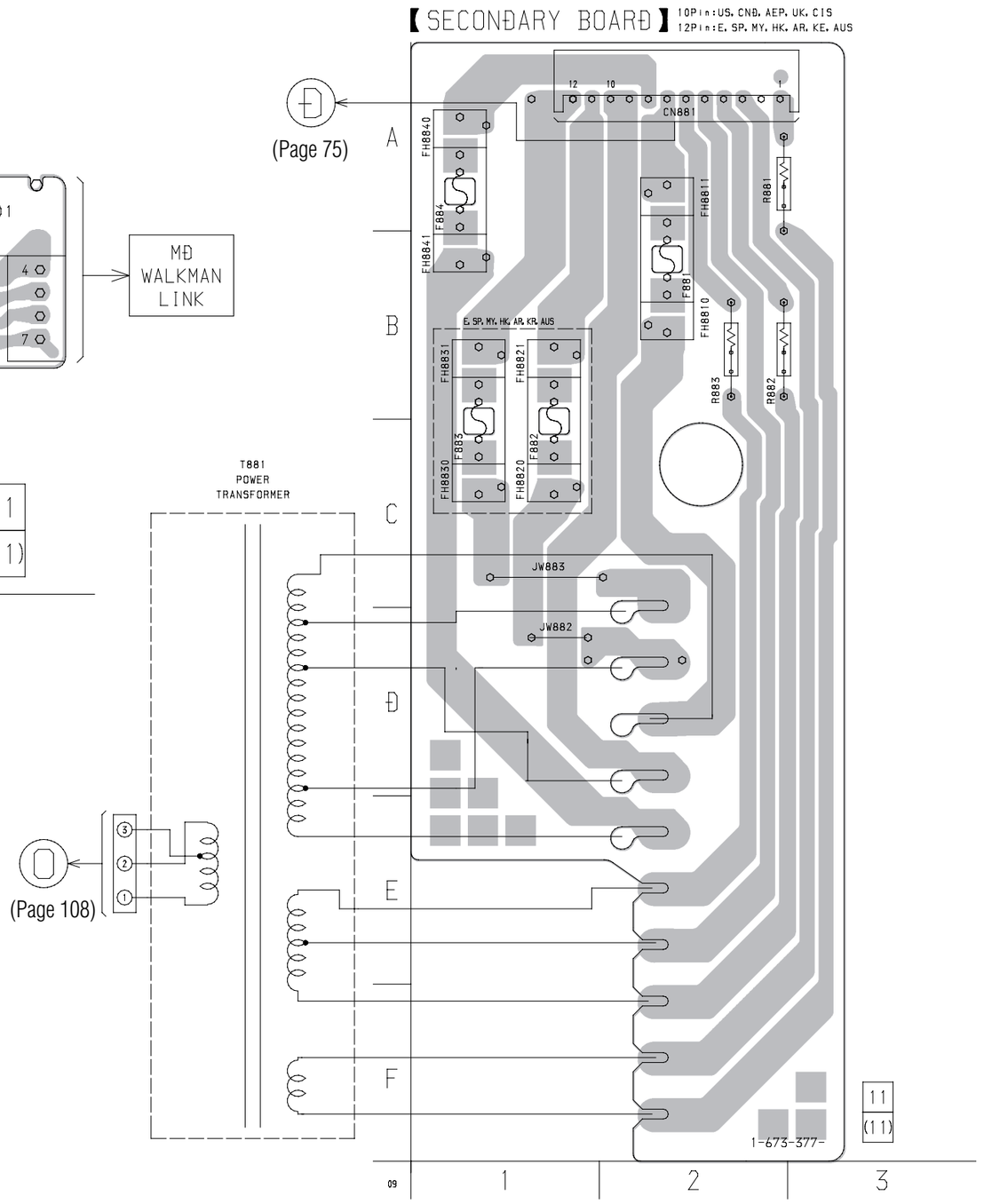
8-26. SCHEMATIC DIAGRAM – CD MOTOR SECTION –



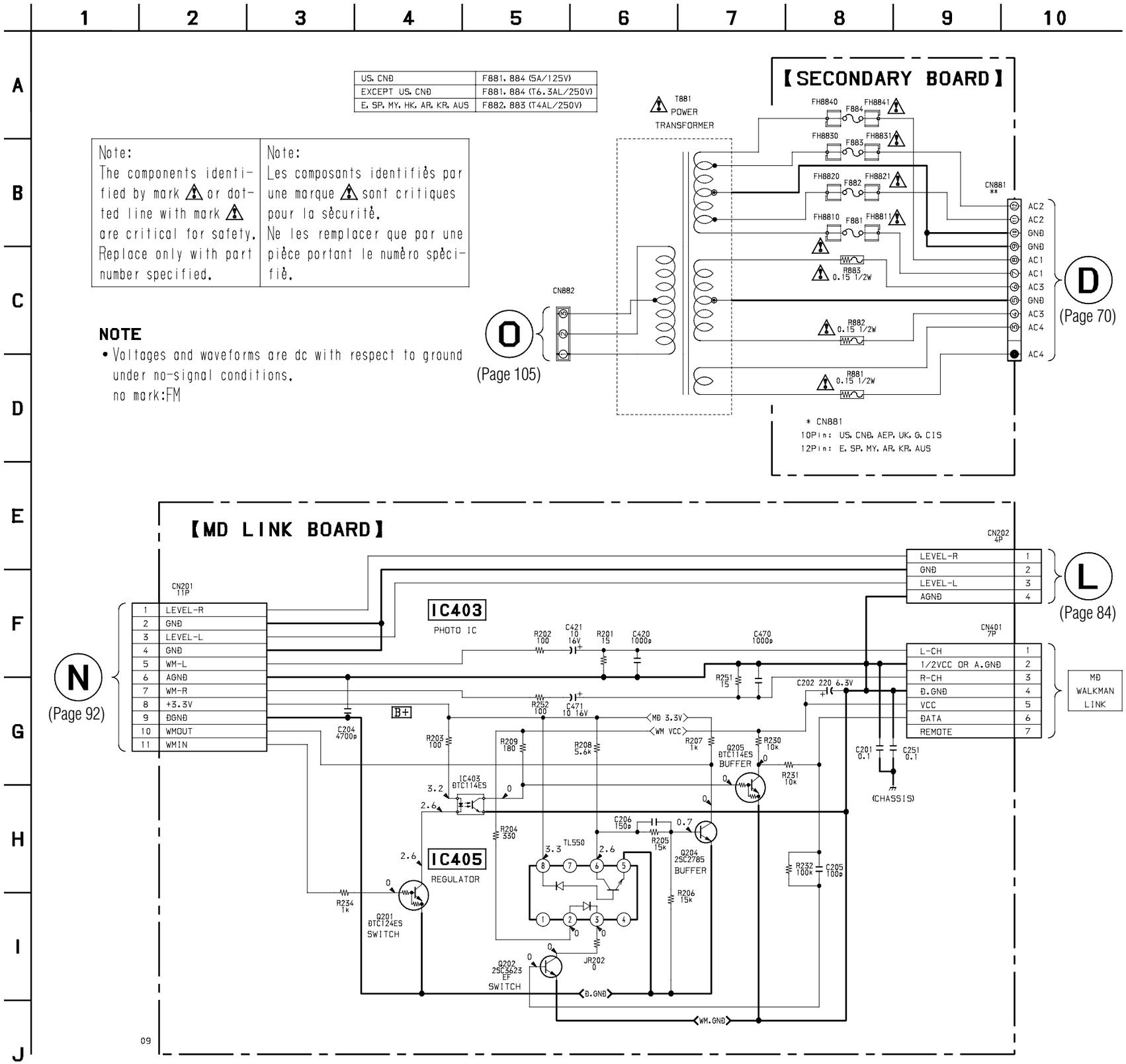
8-27. PRINTED WIRING BOARD – MD LINK SECTION –

• See page 40 for Circuit Boards Location.

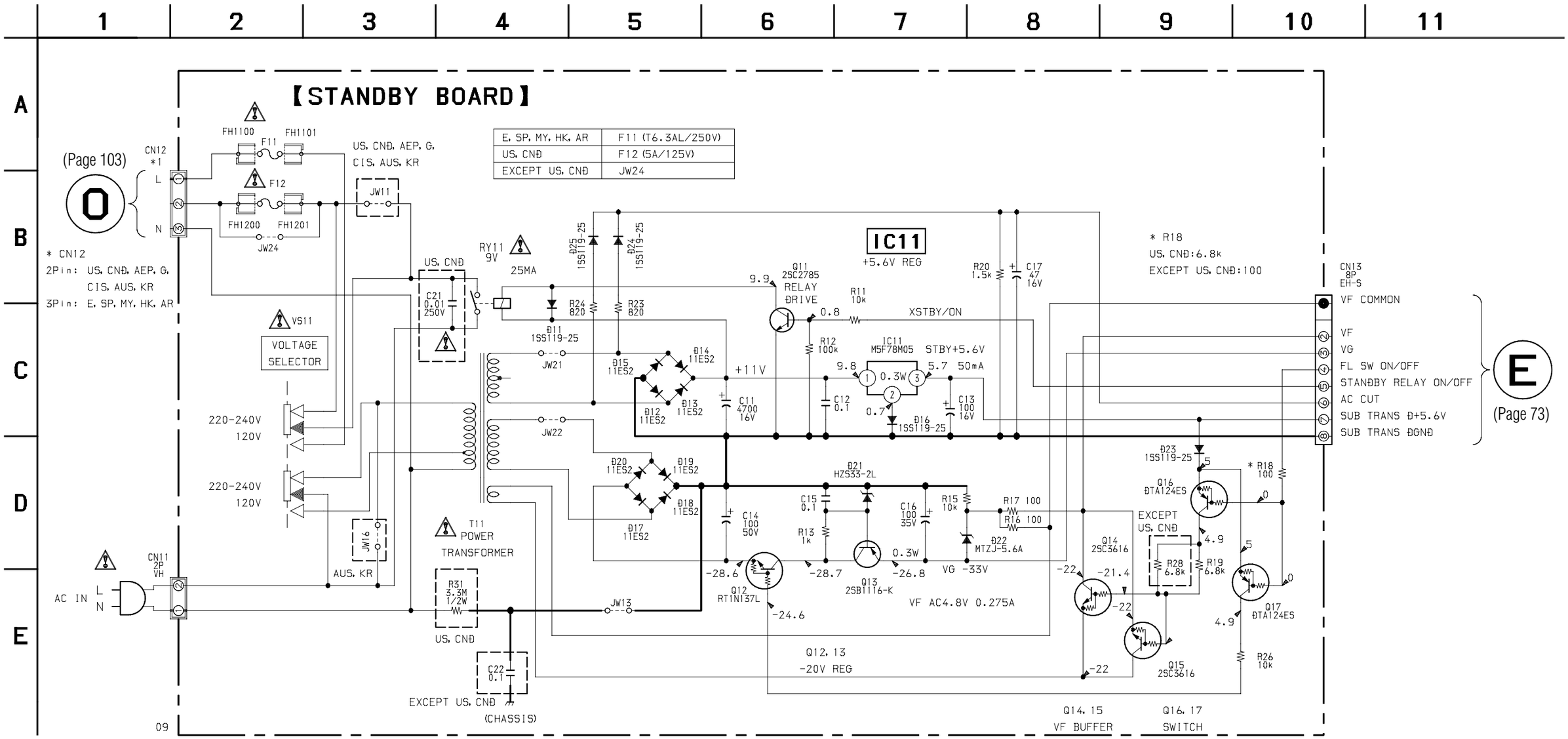




8-28. SCHEMATIC DIAGRAM – MD LINK SECTION –



8-29. SCHEMATIC DIAGRAM – POWER SECTION –



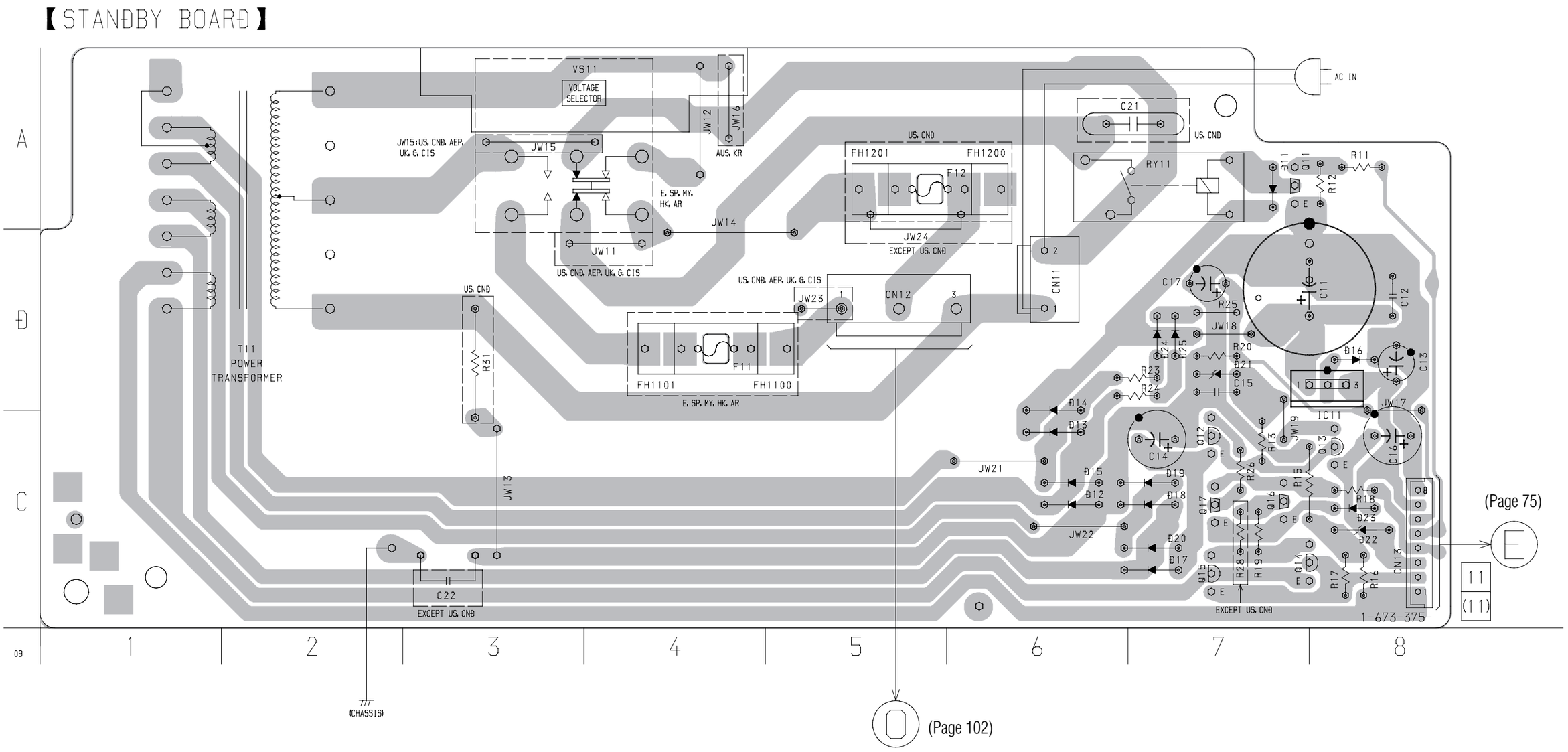
NOTE

- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark:FM

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Note: Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

8-30. PRINTED WIRING BOARD – POWER SECTION –

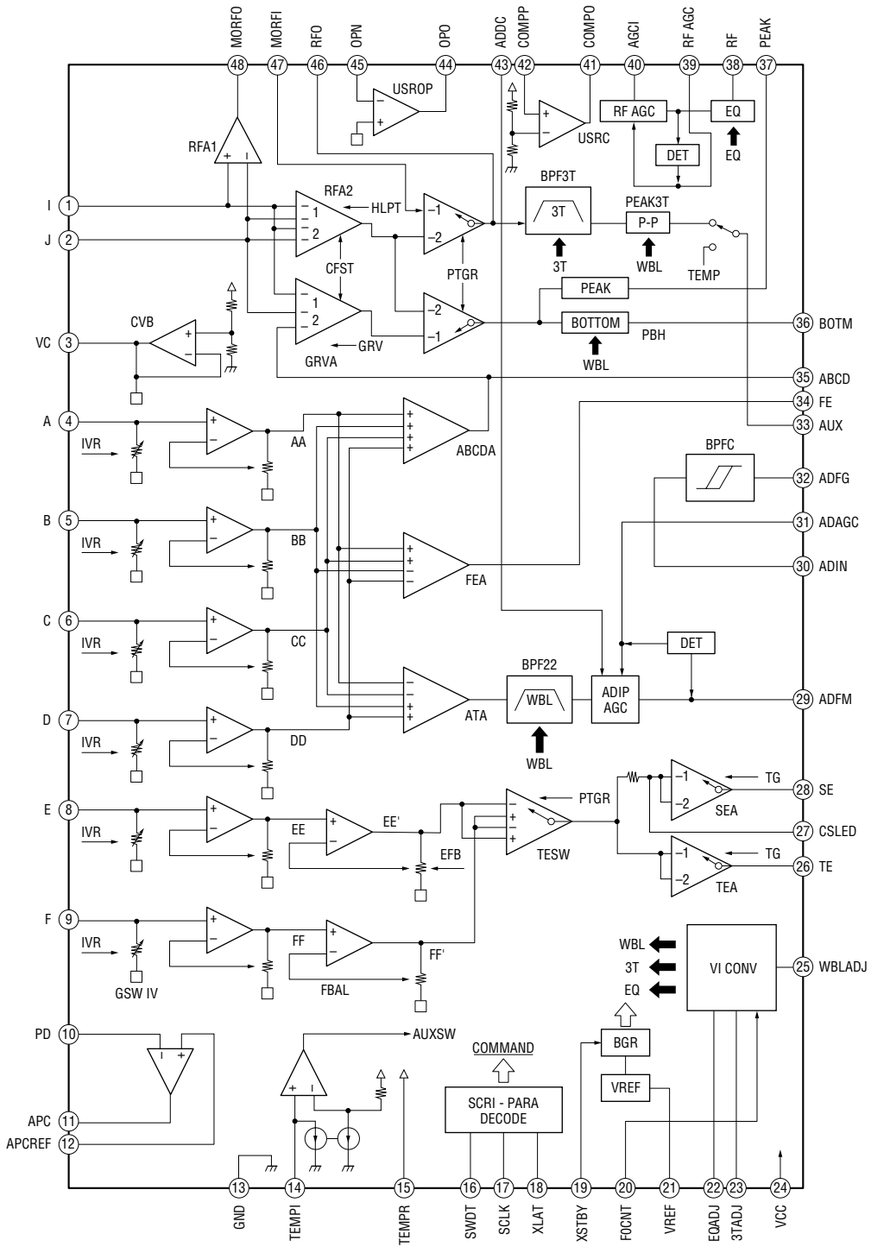
• See page 40 for Circuit Boards Location.



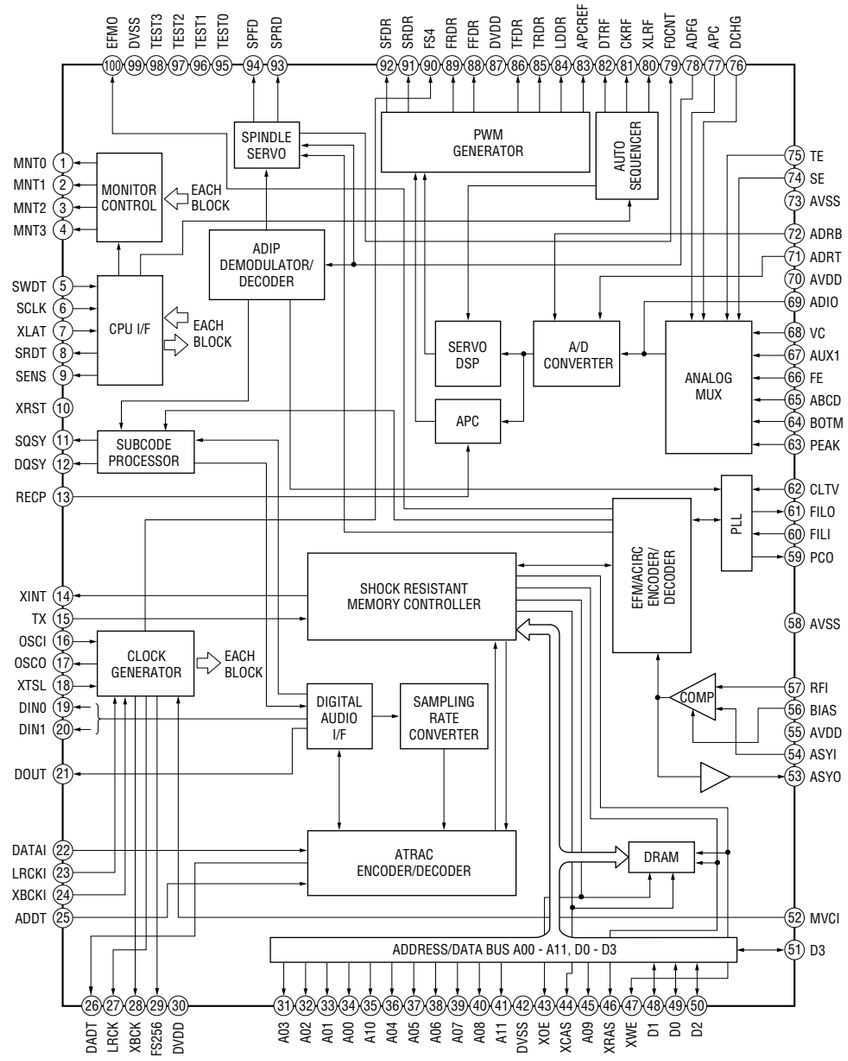
8-31. IC BLOCK DIAGRAMS

• BD (MD) Board

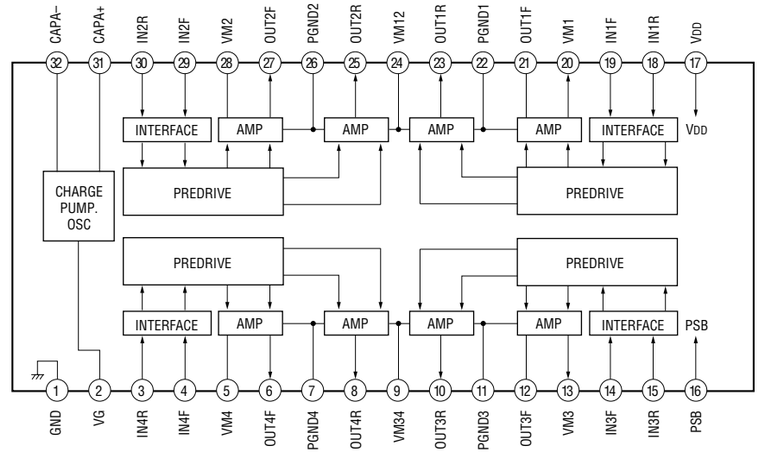
IC101 CXA2523AR



IC121 CXD2654R

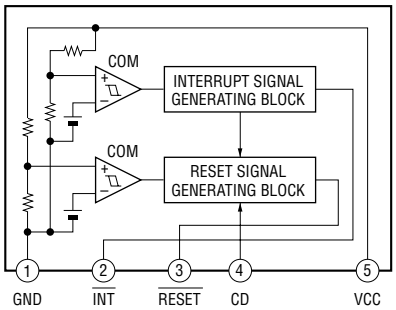


IC152 BH6511FS-E2



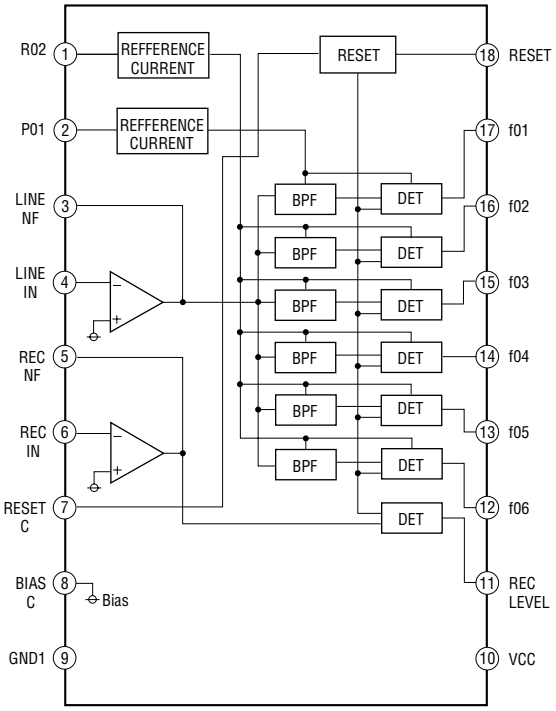
• MAIN (3/4) Board

IC371 M62016L



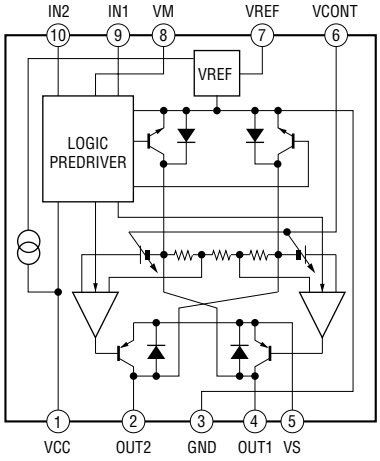
• PANEL (1/2) Board

IC603 BA3830F

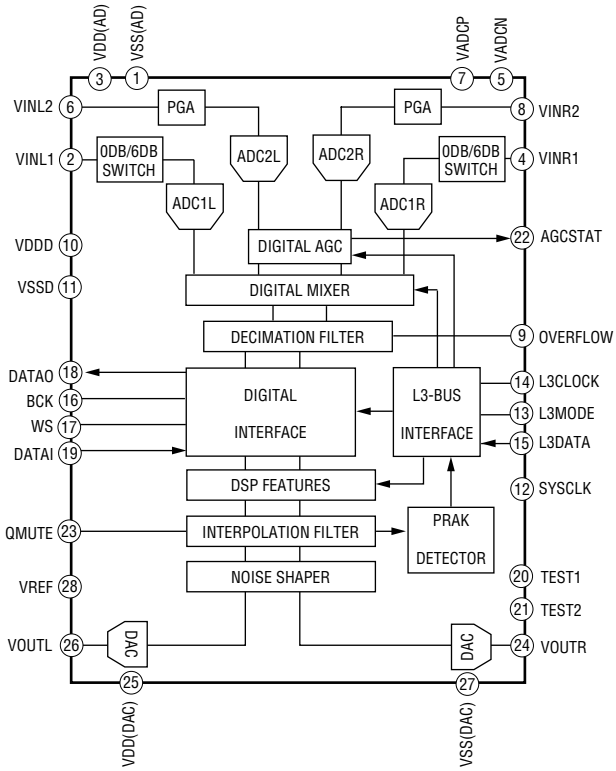


• MD DIGITAL Board

IC153 LB1830M-S-TE-L



IC201 UDA1341TS



8-32. IC PIN FUNCTIONS

• IC101 RF Amplifier (CXA2523AR) (BD (MD) board)

Pin No.	Pin Name	I/O	Function
1	I	I	I-V converted RF signal I input
2	J	I	I-V converted RF signal J input
3	VC	O	Middle point voltage (+1.5V) generation output
4 to 9	A to F	I	Signal input from the optical pick-up detector
10	PD	I	Light amount monitor input
11	APC	O	Laser APC output
12	APCREF	I	Reference voltage input for setting laser power
13	GND	—	Ground
14	TEMPI	I	Temperature sensor connection
15	TEMPR	O	Reference voltage output for the temperature sensor
16	SWDT	I	Serial data input from the CXD2650R or CXD2652AR
17	SCLK	I	Serial clock input from the CXD2650R or CXD2652AR
18	XLAT	I	Latch signal input from the CXD2650R or CXD2652AR "L": Latch
19	XSTBY	I	Stand by signal input "L": Stand by
20	F0CNT	I	Center frequency control voltage input of BPF22, BPF3T, EQ from the CXD2650R or CXD2652AR
21	VREF	O	Reference voltage output (Not used)
22	EQADJ	I/O	Center frequency setting pin for the internal circuit EQ
23	3TADJ	I/O	Center frequency setting pin for the internal circuit BPF3T
24	Vcc	—	+3V power supply
25	WBLADJ	I/O	Center frequency setting pin for the internal circuit BPF22
26	TE	O	Tracking error signal output to the CXD2650R or CXD2652AR
27	CSLED	—	External capacitor connection pin for the sled error signal LPF
28	SE	O	Sled error signal output to the CXD2650R or CXD2652AR
29	ADFM	O	FM signal output of ADIP
30	ADIN	I	ADIP signal comparator input ADFM is connected with AC coupling
31	ADAGC	—	External capacitor connection pin for AGC of ADIP
32	ADFG	O	ADIP duplex signal output to the CXD2650R or CXD2652AR
33	AUX	O	I_3 signal/temperature signal output to the CXD2650R or CXD2652AR (Switching with a serial command)
34	FE	O	Focus error signal output to the CXD2650R or CXD2652AR
35	ABCD	O	Light amount signal output to the CXD2650R or CXD2652AR
36	BOTM	O	RF/ABCD bottom hold signal output to the CXD2650R or CXD2652AR
37	PEAK	O	RF/ABCD peak hold signal output to the CXD2650R or CXD2652AR
38	RF	O	RF equalizer output to the CXD2650R or CXD2652AR
39	RFAGC	—	External capacitor connection pin for the RF AGC circuit
40	AGCI	I	Input to the RF AGC circuit The RF amplifier output is input with AC coupling
41	COMPO	O	User comparator output (Not used)
42	COMPP	I	User comparator input (Fixed at "L")
43	ADDC	I/O	External capacitor pin for cutting the low band of the ADIP amplifier
44	OPO	O	User operation amplifier output (Not used)
45	OPN	I	User operation amplifier inversion input (Fixed at "L")
46	RFO	O	RF amplifier output
47	MORFI	I	Groove RF signal is input with AC coupling
48	MORFO	O	Groove RF signal output

• Abbreviation
APC: Auto Power Control
AGC: Auto Gain Control

• **IC121 Digital Signal Processor, Digital Servo Signal Processor, EFM/ACIRC Encoder/Decoder, Shock-proof Memory Controller, ATRAC Encoder/Decoder, 2M Bit DRAM (CXD2654R) (BD (MD) board)**

Pin No.	Pin Name	I/O	Function
1	MNT0 (FOK)	O	FOK signal output to the system control (monitor output) "H" is output when focus is on
2	MNT1 (SHCK)	O	Track jump detection signal output to the system control (monitor output)
3	MNT2 (XBUSY)	O	Monitor 2 output to the system control (monitor output)
4	MNT3 (SLOC)	O	Monitor 3 output to the system control (monitor output)
5	SWDT	I	Writing data signal input from the system control
6	SCLK	I (S)	Serial clock signal input from the system control
7	XLAT	I (S)	Serial latch signal input from the system control
8	SRDT	O (3)	Reading data signal output to the system control
9	SENS	O (3)	Internal status (SENSE) output to the system control
10	XRST	I (S)	Reset signal input from the system control "L": Reset
11	SQSY	O	Subcode Q sync (SCOR) output to the system control "L" is output every 13.3 msec. Almost all, "H" is output
12	DQSY	O	Digital In U-bit CD format or MD format subcode Q sync (SCOR) output to the system control
13	RECP	I	Laser power switching input from the system control "H": Recording, "L": Playback
14	XINT	O	Interrupt status output to the system control
15	TX	I	Recording data output enable input from the system control
16	OSCI	I	System clock input (512Fs=22.5792 MHz)
17	OSCO	O	System clock output (512Fs=22.5792 MHz) (Not used)
18	XTSL	I	System clock frequency setting "L": 45.1584 MHz, "H": 22.5792 MHz (Fixed at "H")
19	DIN0	I	Digital audio input (Optical input)
20	DIN1	I	Digital audio input (Optical input)
21	DOUT	O	Digital audio output (Optical output)
22	DADTI	I	Serial data input
23	LRCKI	I	LR clock input "H" : Lch, "L" : R ch
24	XBCKI	I	Serial data clock input
25	ADDT	I	Data input from the A/D converter
26	DADT	O	Data output to the D/A converter
27	LRCK	O	LR clock output for the A/D and D/A converter (44.1 kHz)
28	XBCK	O	Bit clock output to the A/D and D/A converter (2.8224 MHz)
29	FS256	O	11.2896 MHz clock output (Not used)
30	DVDD	—	+3V power supply (Digital)
31 to 34	A03 to A00	O	DRAM address output
35	A10	O	DRAM address output (Not used)
36 to 40	A04 to A08	O	DRAM address output
41	A11	O	DRAM address output (Not used)
42	DVSS	—	Ground (Digital)
43	XOE	O	Output enable output for DRAM
44	XCAS	O	$\overline{\text{CAS}}$ signal output for DRAM
45	A09	O	Address output for DRAM
46	XRAS	O	$\overline{\text{RAS}}$ signal output for DRAM
47	XWE	O	Write enable signal output for DRAM (Used : CXD2652AR, Not used : CXD2650R)

* I (S) stands for Schmidt input, I (A) for analog input, O (3) for 3-state output, and O (A) for analog output in the column I/O

Pin No.	Pin Name	I/O	Function
48	D1	I/O	Data input/output for DRAM
49	D0	I/O	
50, 51	D2, D3	I/O	
52	MVCI	I (S)	Clock input from an external VCO (Fixed at “L”)
53	ASYO	O	Playback EFM duplex signal output
54	ASYI	I (A)	Playback EFM comparator slice level input
55	AVDD	—	+3V power supply (Analog)
56	BIAS	I (A)	Playback EFM comparator bias current input
57	RFI	I (A)	Playback EFM RF signal input
58	AVSS	—	Ground (Analog)
59	PCO	O (3)	Phase comparison output for the recording/playback EFM master PLL
60	FILI	I (A)	Filter input for the recording/playback EFM master PLL
61	FILO	O (A)	Filter output for the recording/playback EFM master PLL
62	CLTV	I (A)	Internal VCO control voltage input for the recording/playback EFM master PLL
63	PEAK	I (A)	Light amount signal peak hold input from the CXA2523R
64	BOTM	I (A)	Light amount signal bottom hold input from the CXA2523R
65	ABCD	I (A)	Light amount signal input from the CXA2523R
66	FE	I (A)	Focus error signal input from the CXA2523R
67	AUX1	I (A)	Auxiliary A/D input
68	VC	I (A)	Middle point voltage (+1.5V) input from the CXA2523R
69	ADIO	O (A)	Monitor output of the A/D converter input signal (Not used)
70	AVDD	—	+3V power supply (Analog)
71	ADRT	I (A)	A/D converter operational range upper limit voltage input (Fixed at “H”)
72	ADRB	I (A)	A/D converter operational range lower limit voltage input (Fixed at “L”)
73	AVSS	—	Ground (Analog)
74	SE	I (A)	Sled error signal input from the CXA2523R
75	TE	I (A)	Tracking error signal input from the CXA2523R
76	DCHG	I (A)	Connected to +3V power supply
77	APC	I (A)	Error signal input for the laser digital APC (Fixed at “L”)
78	ADFG	I (S)	ADIP duplex FM signal input from the CXA2523R (22.05 ± 1 kHz)
79	F0CNT	O	Filter f_0 control output to the CXA2523R
80	XLRF	O	Control latch output to the CXA2523R
81	CKRF	O	Control clock output to the CXA2523R
82	DTRF	O	Control data output to the CXA2523R
83	APCREF	O	Reference PWM output for the laser APC
84	TEST0	O	PWM output for the laser digital APC (Not used)
85	TRDR	O	Tracking servo drive PWM output (–)

• Abbreviation
EFM: Eight to Fourteen Modulation
PLL : Phase Locked Loop
VCO: Voltage Controlled Oscillator

Pin No.	Pin Name	I/O	Function
86	TFDR	O	Tracking servo drive PWM output (+)
87	DVDD	—	+3V power supply (Digital)
88	FFDR	O	Focus servo drive PWM output (+)
89	FRDR	O	Focus servo drive PWM output (–)
90	FS4	O	176.4 kHz clock signal output (X'tal) (Not used)
91	SRDR	O	Sled servo drive PWM output (–)
92	SFDR	O	Sled servo drive PWM output (+)
93	SPRD	O	Spindle servo drive PWM output (–)
94	SPFD	O	Spindle servo drive PWM output (+)
95	FGIN	I (S)	Test input (Fixed at "L")
96 to 98	TEST1 to TEST3	I	
99	DVSS	—	Ground (Digital)
100	EFMO	O	EFM output when recording

• Abbreviation
EFM: Eight to Fourteen Modulation

• **IC501 MASTER CONTROL (M30620MC-A03FP) (MAIN board (4/4))**

Pin No.	Pin Name	I/O	Function
1	STK-MUTE	O	Power amp ON/OFF signal output
2	POWER	O	Power ON/OFF signal output
3	F-RELAY	O	Front speaker relay control output
4	REAR-RELAY	O	Rear speaker relay control output (Not used)
5	CD-POWER	O	CD power on signal output
6	LINE-MUTE	O	Line mute ON/OFF selection output
7	DBFB-H/L	O	DBFB H/L select signal output
8, 9	–	–	Not used
10	XC-IN	I	X'tal (32.768MHz)
11	XC-OUT	O	
12	RESET	I	Reset signal input
13	X-OUT	O	X'tal (16MHz)
14	VSS	–	Ground
15	X-IN	I	X'tal (16MHz)
16	VCC	–	Power supply (+5V)
17	NMI	I	Not used (PULL UP EVER+5V)
18	WAKE UP	I	WAKE UP (Fixed at fixed at "L")
19	SCOR	I	Subcode data request signal output
20	RDS-INT	I	RDS data interrupt input
21	RDS-DATA	I	
22	AC-CUT	I	Back up signal input
23	PL-CLK	O	Clock signal to pro-logic (Not used)
24	PL-DATA	O	Data signal to pro-logic (Not used)
25	PL-LAT	O	Latch signal to pro-logic (Not used)
26	TIMER LED	I	Timer LED ON/OF
27	PROTECTOR ON	I	Speaker protect ON/OF
28	–	–	Not used
29	IIC-CLK	O	Clock output for IC601
30	IIC-DATA	O	Data output for IC601
31	–	–	Not used
32	SQ-DATA	I	Subcode Q data clock input
33	SQ-CLK	I	
34	SW-MODE	O	Not used
35	CD-DATA	O	CD data output
36	HP DET	I	Head phone swich detect
37	CD-CLK	O	CD clock output
38	493-LAT	O	Latch signal output for M62493FP (IC101)
39	ST-BY LED/ CLOCK-OUT	O	Clock ond stand by LED signal output
40	L+R/L-R	I	Not used
41	BY-PASS	I	
42	FL-SW	I	FL switch ON/OFF
43	STBY RELAY	I	Stand by relay ON/OFF
44	HIGH/LOW FRQ	O	FREQ high/low signal for SYNC bass
45	–	–	Not used
46	D-IN SEL	I	Digital input selector
47	493-DATA	O	Data output for M62493FP (IC101)
48	493-CLK	O	Clock output for M62493FP (IC101)
49	ST-MUTE	O	Tuned mute signal output

Pin No.	Pin Name	I/O	Function
50	STEREO	I	Stereo detection for tuner
51	TUNED	I	Tuned detection for tuner
52	ST-CE	O	Tuner chip enable output
53	ST-DOUT	O	Tuner data output
54	ST-DIN	I	Tuner data input
55	ST-CLK	O	Tuned clock output
56	SENS	I	BD Condition signal input
57	HDLD	O	Mode hold signal output
58	XLAT	O	CD latch signal output
59	XRST	O	CD reset signal output
60	DISC-SENS	I	Slit sensor of disc table input
61	T-SENS	I	CD table detection signal input
62	VCC	–	Power supply (+5V)
63	TBL-L	O	Table motor control output
64	VSS	–	Ground
65	TBL-R	O	Table motor control output
66	LOAD-OUT	O	Loading motor control signal output
67	LOAD-IN	O	
68	ENC 3/UP-SW	I	Disc tray address detect encoder input
69	ENC 2/DISC-LED	I	
70	ENC 1	I	
71	OUT-OPEN	O	Loading out detection signal output
72	B-TRG	O	Trigger motor control output
73	A-TRG	O	
74	CAP-M-COT2	O	Capstan motor control 1(-) signal output
75	CAP-M-COT1	O	Capstan motor control 2(-) signal output
76	CAP-M-H/L	O	Capstan motor H/L speed select signal output
77	AMS-IN	I	Connected to ground
78	TC-MUTE	O	TC mute ON/OFF selection output
79	R/PB/PAS	O	REC/PB/PASS selection output
80	NR-ON/OFF	O	NR ON/OFF signal output
81	REC-MUTE	O	REC mute ON/OFF selection output
82	BIAS	O	Bias ON/OFF selection output
83	EQ-H/N	O	Equalizer H/N select output
84	PB-A/B	O	PB Deck A/Deck B select output
85	ALC	O	ALC ON/OFF output
86	B-PLAY-SW	I	Deck B play detect
87	A-PLAY-SW	I	Deck A play detect
88	A-HALF	I	Deck A cassette detect
89	B-HALF	I	Deck B cassette detect
90	B-SHUT	I	B Deck reel pulse detector
91	A-SHUT	I	A Deck reel pulse detector
92	SOFT-TEST	O	Software test port
93, 94	KEY/CD-ADJ	I	CD adjust point port
95	MODEL IN	I	Version select signal input
96	AVSS	–	Ground
97	SPEC-IN	I	Version select signal input
98	VREF	I	Analog reference voltage input
99	AVCC	–	Analog power supply
100	TC-RELAY	O	REC/PB head selection output for IC602

• **IC601 DISPLAY CONTROL (TMP88CS77F-6003) (DISPLAY board)**

Pin No.	Pin Name	I/O	Function
1	JOG A	I	Rotary encoder (S601) pulse input
2 to 4	LED	O	LED switch signal
5	WAKE UP	O	WAKE UP signal
6 to 8	LED	O	LED switch signal
9	L SEL	O	LED select signal
10	JOG B	I	Rotary encoder (S601) pulse input
11, 12	VOL A, VOL B	I	Rotary encoder (S602) pulse input
13 to 15	DISC 3 LED to DISC 1 LED	O	LED switch signal
16	MD LED	O	LED switch signal
17 to 20	KEY 3 to KEY 0	I	Key input
21	MD REC R	O	MD REC R signal
22	S LOW (F01)	O	Sptctrum analyzer input (Super low flegency) (40Hz)
23	BPF 1 (F02)	O	Sptctrum analyzer input (100Hz)
24	BBF 2	O	Sptctrum analyzer input (400Hz)
25	BBF 3	O	Sptctrum analyzer input (2KHz)
26	BBF 4	O	Sptctrum analyzer input (6KHz)
27	ALL B (L+R)	I	Sptctrum analyzer input (all band)
28	MD REC L	O	MD REC L signal
29	VSS I/O	–	Ground
30	VASS	–	Ground
31	VA ref	I	Analog reference voltage input
32	VDD I/O	–	Power supply (+5V)
33 to 50	G18 to G1	O	FL gride signal output
51	VDD FV7	–	Power supply (+5V)
52 to 86	S1 to S35	O	FL segment signal output
87	VKK	–	Power supply (-30V)
88	VDD for CPU	–	Power supply (+5V)
89	X IN	I	X’tal (12.5MHz)
90	VSS for CPU	–	Ground
91	X OUT	O	X’tal (12.5MHz)
92	Reset	I	Reset signal input from main controller
93, 94	LED	O	LED switch signal
95	TAST	I	Connected ground
96	LED	O	LED switch signal
97	I^2C DATA	O	Data output for IC501
98	I^2C CLK	O	Clock output for IC501
99	LED	O	LED switch signal
100	SIRCS	I	Remote commander signal input

SECTION 9
EXPLODED VIEWS

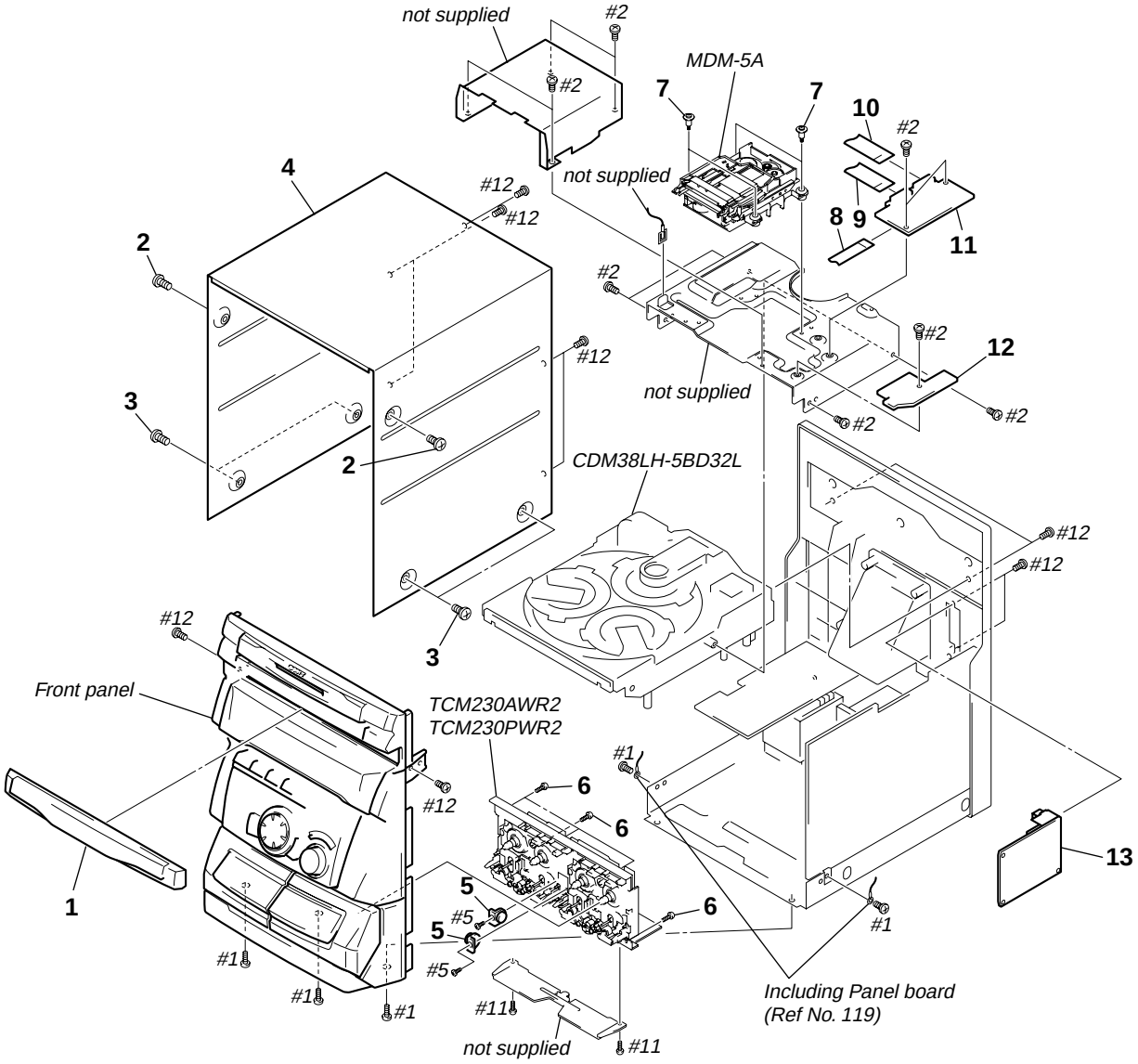
NOTE:
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

- Abbreviation
  CND : Canadian model
  G : German model
  SP : Singapore model
  MY : Malaysia model
  AR : Argentine model
  KR : Korean model
  AUS : Australian model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

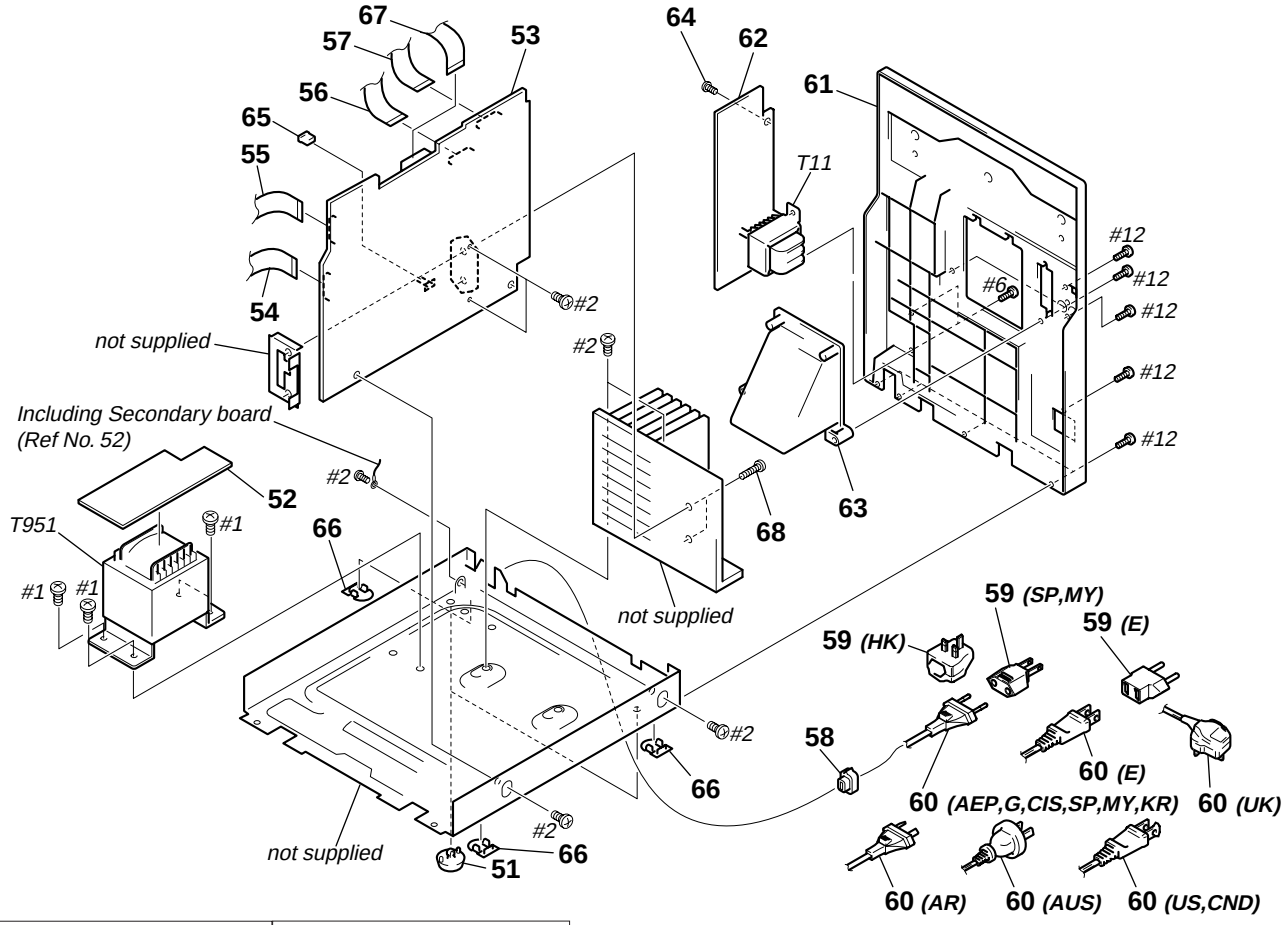
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

9-1. CASE SECTION



Ref. No.	Part No.	Description	Remark
1	X-4951-202-1	LOADING PANEL ASSY	
2	3-363-099-71	SCREW (CASE 3 TP2)	
3	3-363-099-11	SCREW (CASE 3 TP2)	
4	4-216-858-01	CASE	
5	4-215-062-01	DAMPER	
6	4-951-620-01	SCREW (2.6x8), +BVTP	
7	4-999-839-11	SCREW (+BVTTWH M3), STEP	
8	1-775-102-11	WIRE (FLAT TYPE) (11 CORE)	
9	1-775-192-11	WIRE (FLAT TYPE) (21 CORE) (150mm)	
10	1-775-208-11	WIRE (FLAT TYPE) (23 CORE) (140mm)	
11	A-4419-305-A	MD DIGITAL BOARD, COMPLETE	
12	A-4419-326-A	MD LINK BOARD, COMPLETE (AEP,UK,G,CIS)	
12	A-4419-499-A	MD LINK BOARD, COMPLETE (EXCEPT AEP,UK,G,CIS)	
13	1-233-544-14	ENCAPSULATED COMPONENT (US,CND)	
13	1-233-545-14	ENCAPSULATED COMPONENT (AR,KR,AUS)	
13	1-233-546-13	ENCAPSULATED COMPONENT (SP,MY,HK)	
13	1-693-443-11	TUNER UNIT (FM/AM) (AEP,UK,G,CIS)	
13	1-693-453-11	TUNER UNIT (FM/AM) (E)	

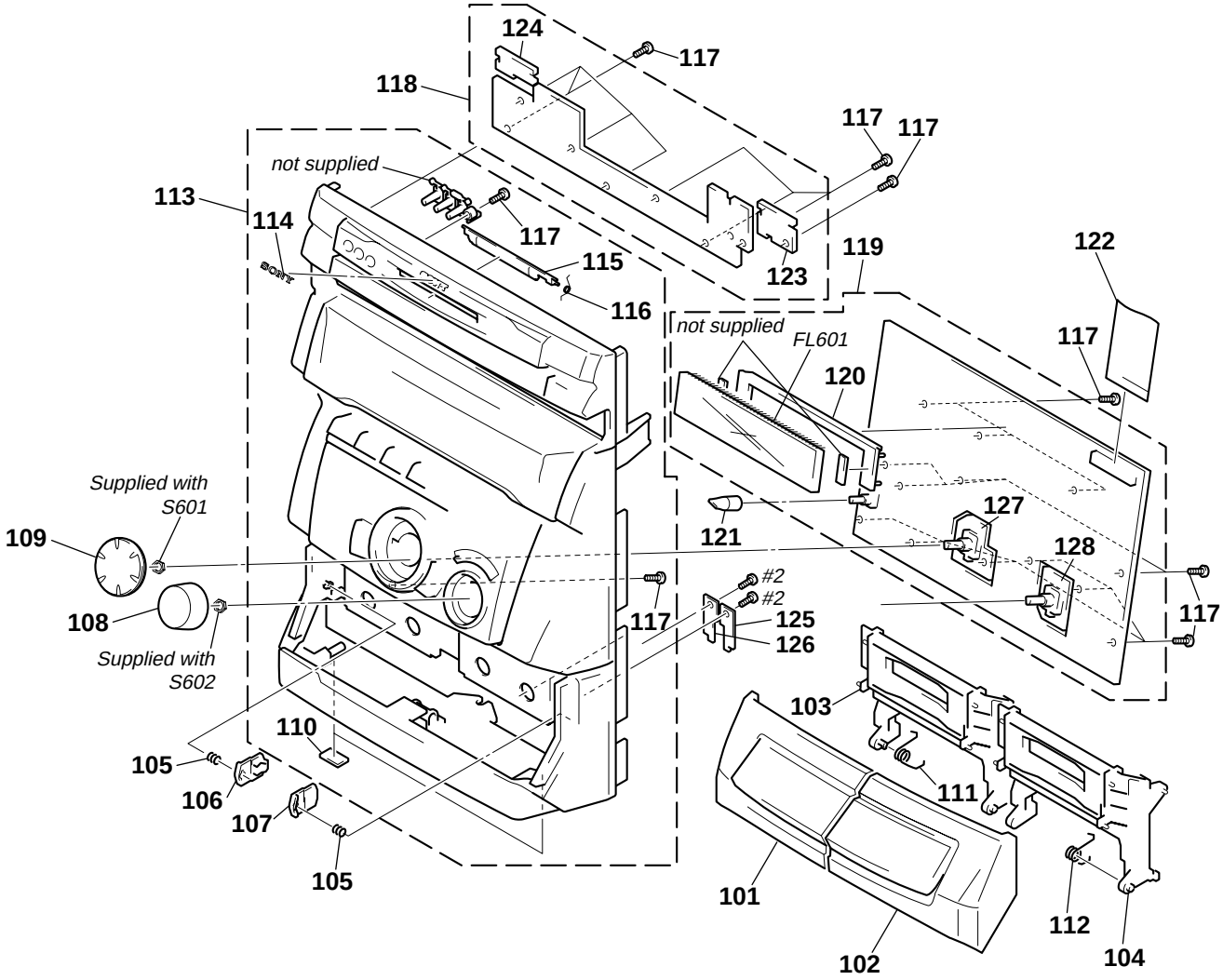
9-2. CHASSIS SECTION



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
51	4-965-822-01	FOOT	
52	1-673-377-11	SECONDARY BOARD	
53	A-4405-868-A	MAIN BOARD, COMPLETE (AEP,UK,G,CIS)	
53	A-4405-869-A	MAIN BOARD, COMPLETE (SP,MY,HK)	
53	A-4405-871-A	MAIN BOARD, COMPLETE (E,AR)	
53	A-4405-872-A	MAIN BOARD, COMPLETE (AUS)	
53	A-4405-873-A	MAIN BOARD, COMPLETE (KR)	
53	A-4405-875-A	MAIN BOARD, COMPLETE (US,CND)	
54	1-773-043-11	WIRE (FLAT TYPE) (17 CORE)	
55	1-773-025-11	WIRE (FLAT TYPE) (15 CORE) (330mm)	
56	1-769-976-11	WIRE (FLAT TYPE) (13 CORE)	(US,CND,E,AR,KR,AUS)
56	1-773-008-11	WIRE (FLAT TYPE) (15 CORE) (140mm)	(AEP,UK,G,CIS,SP,MY,HK)
57	1-773-185-11	WIRE (FLAT TYPE) (23 CORE)	
* 58	3-703-244-00	BUSHING (2104), CORD (EXCEPT E)	
58	3-703-571-11	BUSHING (S) (4516), CORD (E)	
59	1-569-007-11	ADAPTOR, CONVERSION 2P (E)	
59	1-569-008-21	ADAPTOR, CONVERSION 2P (SP,MY)	
59	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (HK)	
⚠60	1-696-845-11	CORD, POWER (AUS)	
⚠60	1-769-079-11	CORD, POWER (KR)	
⚠60	1-777-071-41	CORD, POWER (AEP,G,CIS,SP,MY)	
⚠60	1-777-514-11	CORD, POWER (UK)	
⚠60	1-782-315-21	CORD, POWER (E)	
⚠60	1-783-820-21	CORD, POWER (US,CND)	
⚠60	1-783-941-31	CORD, POWER (AR)	
61	X-4951-203-1	BACK PANEL ASSY (AEP,UK,G,CIS)	
61	X-4951-205-1	BACK PANEL ASSY (E,SP,MY,HK,AR)	
61	X-4951-207-1	BACK PANEL ASSY (US,CND,KR,AUS)	
62	A-4419-327-A	STANDBY BOARD, COMPLETE (AEP,UK,G,CIS)	
62	A-4419-328-A	STANDBY BOARD, COMPLETE (E,SP,MY,HK,AR)	
62	A-4419-329-A	STANDBY BOARD, COMPLETE (US,CND)	
62	A-4419-330-A	STANDBY BOARD, COMPLETE (AUS)	
62	A-4419-651-A	STANDBY BOARD, COMPLETE (KR)	
63	4-216-856-01	DUCT	
64	4-951-620-01	SCREW (2.6X8), +BVTP	
65	1-569-972-21	SOCKET, SHORT 2P	
66	4-216-857-01	COVER (LIZ)	
67	1-783-570-11	WIRE (FLAT TYPE)(19 CORE)	
68	4-221-078-01	SCREW +BSW 3X20 (S)	
⚠T11	1-433-832-11	TRANSFORMER, POWER	(E,SP,MY,HK,AR,KR,AUS)
⚠T11	1-433-833-11	TRANSFORMER, POWER (AEP,UK,G,CIS)	
⚠T11	1-433-835-11	TRANSFORMER, POWER (US,CND)	
⚠T951	1-433-790-11	TRANSFORMER, POWER (CND)	
⚠T951	1-433-791-11	TRANSFORMER, POWER (AEP,UK,G,CIS)	
⚠T951	1-433-792-11	TRANSFORMER, POWER (US)	
⚠T951	1-433-793-11	TRANSFORMER, POWER (KR)	
⚠T951	1-433-794-11	TRANSFORMER, POWER (E,SP,MY,HK,AR,AUS)	

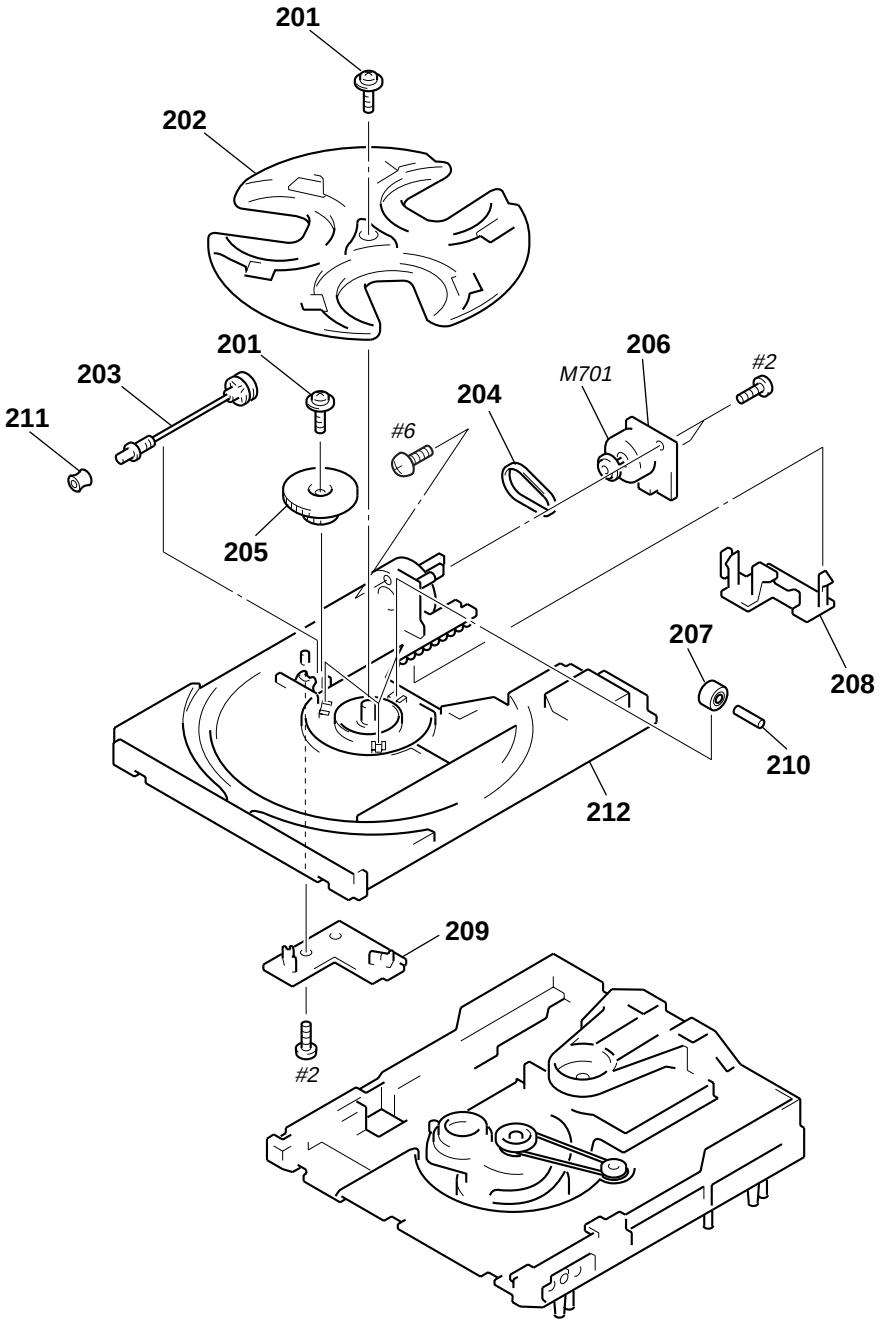
9-3. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
101	X-4951-200-1	CASSETTE LID (A) ASSY	
102	X-4951-201-1	CASSETTE LID (B) ASSY	
103	X-4951-198-1	CASSETTE HOLDER (A) ASSY	
104	X-4951-199-1	CASSETTE HOLDER (B) ASSY	
105	4-214-775-11	SPRING, PUSH CATCHER RETURN	
106	4-214-760-11	CATCHER (A), PUSH	
107	4-214-761-11	CATCHER (B), PUSH	
108	4-214-384-11	KNOB (VOL)	
109	4-214-383-11	KNOB (JOG)	
110	4-930-336-61	FOOT (FELT)	
111	4-216-415-01	SPRING (L)	
112	4-216-416-01	SPRING (R)	
113	X-4951-197-1	FRONT PANEL ASSY (AEP,UK,G,CIS)	
113	X-4951-204-1	FRONT PANEL ASSY (EXCEPT AEP,UK,G,CIS)	
114	4-962-708-71	EMBLEM (4-A), SONY	
115	4-216-729-41	LID (CARTRIDGE)	
116	4-976-593-11	SPRING (LID), TORSION	

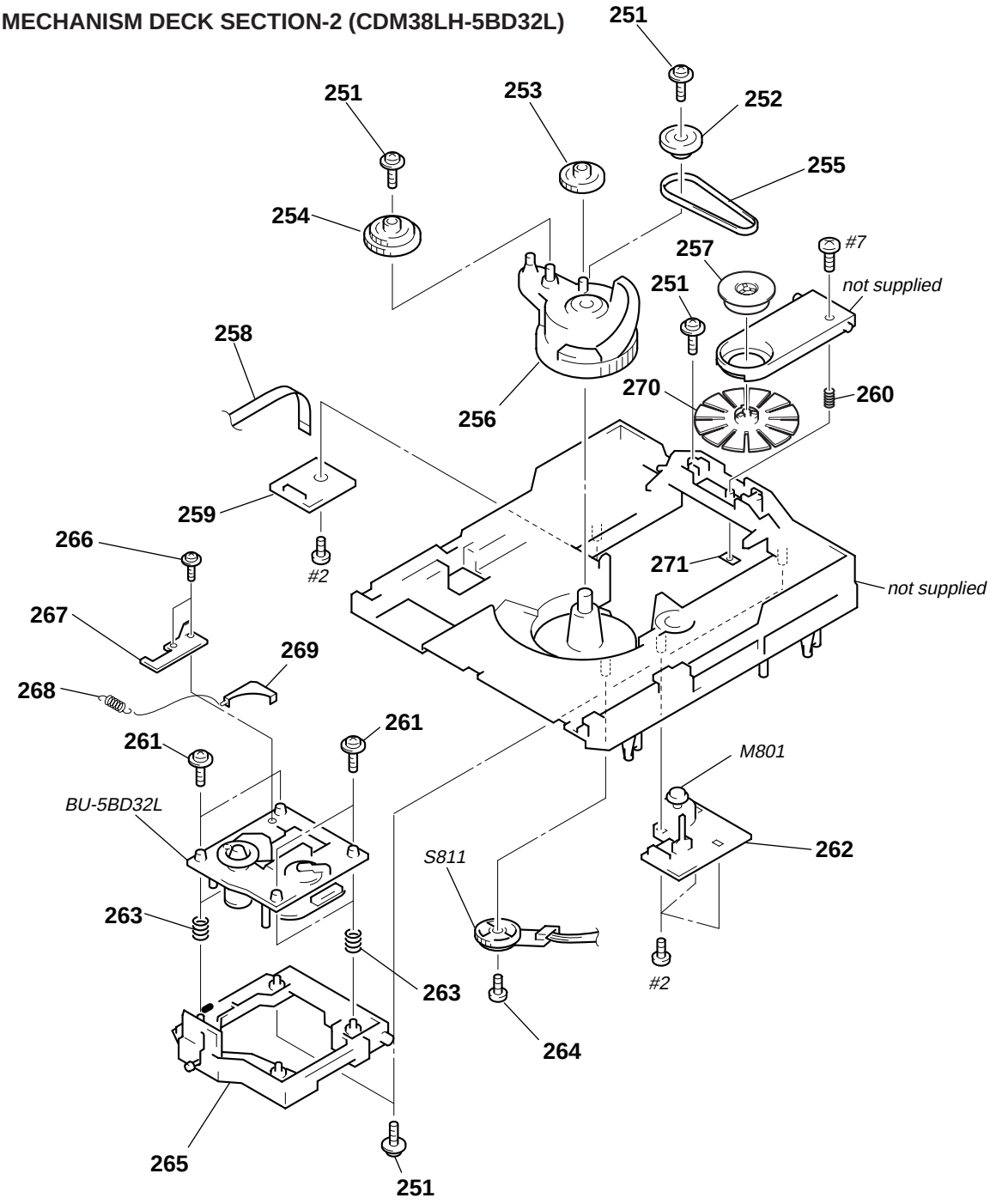
Ref. No.	Part No.	Description	Remark
117	4-951-620-01	SCREW (2.6X8), +BVTP	
118	A-4419-498-A	CD PANEL BOARD, COMPLETE (EXCEPT AEP,UK,G,CIS)	
118	A-4419-325-A	CD PANEL BOARD, COMPLETE (AEP,UK,G,CIS)	
119	A-4419-324-A	DISPLAY BOARD, COMPLETE (AEP,UK,G,CIS)	
119	A-4419-497-A	DISPLAY BOARD, COMPLETE (EXCEPT AEP,UK,G,CIS)	
* 120	4-214-439-11	HOLDER, FL TUBE	
121	4-214-385-81	KNOB (MIC)	
122	1-675-345-11	WIRE (FLAT TYPE)(23 CORE)	
123	1-673-382-11	MD LINK SW BOARD	
124	1-673-381-11	POWER SW BOARD	
125	1-673-837-21	TC STOPPER A BOARD	
126	1-673-838-21	TC STOPPER B BOARD	
127	1-673-379-11	JOG BOARD	
128	1-673-380-11	VOL BOARD	
FL601	1-517-841-11	INDICATOR TUBE, FLUORESCENT	

9-4. CD MECHANISM DECK SECTION-1 (CDM38LH-5BD32L)



Ref. No.	Part No.	Description	Remark
201	4-981-789-01	BRACKET, YOKE	
202	4-977-945-01	TRAY (TURN)	
203	X-4946-665-1	SHAFT ASSY, WORM	
204	4-977-943-01	BELT (TURN) (1.2)	
205	4-977-956-01	WHEEL, WORM	
* 206	1-658-577-11	MOTOR (TURN) BOARD	
207	4-988-162-01	ROLLER	
208	4-977-941-01	BEARING (WORM)	
* 209	1-658-576-11	SENSOR BOARD	
210	4-934-376-01	SHAFT (ROLLER)	
211	4-981-187-01	COLLAR (WORM)	
212	4-977-944-01	TRAY (SLIDE)	
M701	A-4672-004-A	MOTOR ASSY (TURN)	

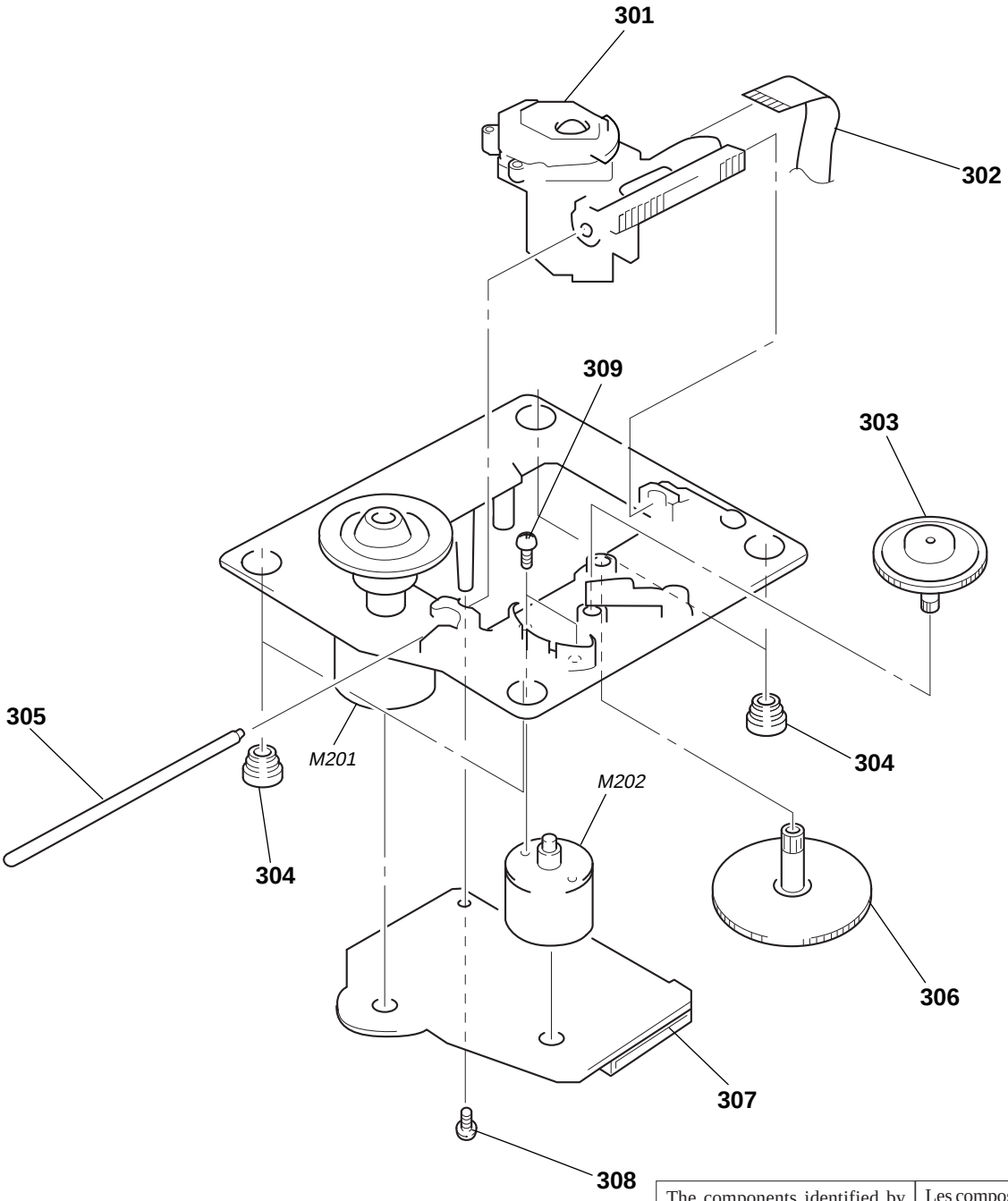
9-5. CD MECHANISM DECK SECTION-2 (CDM38LH-5BD32L)



Ref. No.	Part No.	Description	Remark
251	4-917-583-71	BRACKET, YOKE	
252	4-977-954-01	PULLEY (SL)	
253	4-977-953-01	GEAR (SL-A)	
254	4-977-955-01	GEAR (SL-B)	
255	4-977-942-01	BELT (SL) (1.4)	
256	X-4946-667-1	CAM ASSY, BU	
257	1-452-925-21	MAGNET ASSY	
258	1-776-042-11	WIRE (FLAT TYPE) (8 CORE)	
* 259	1-658-575-11	CONNECTOR BOARD	
260	4-900-743-01	SPRING, COMPRESSION	
261	4-985-672-01	SCREW (+PTPWHM2.6), FLOATING	
* 262	1-658-578-11	MOTOR (SLIDE) BOARD	

Ref. No.	Part No.	Description	Remark
263	4-982-447-01	SPRING (BU), COMPRESSION	
264	4-951-620-41	SCREW (2.6), +BVTP	
265	X-4949-570-1	HOLDER (BU) ASSY	
266	4-989-494-01	SCREW (SLIDER), STEP	
267	4-989-492-11	SLIDER (38)	
268	4-989-819-02	SPRING, TENSION	
269	4-989-491-01	COVER, LENS	
270	4-993-142-21	PULLEY (L), PRESS	
* 271	4-900-718-01	BRACKET (ADJUSTMENT)	
S811	1-473-335-11	ENCODER, ROTARY	
M801	A-4672-004-A	MOTOR ASSY (SLIDE)	

9-6. BASE UNIT SECTION (BU-5BD32L)

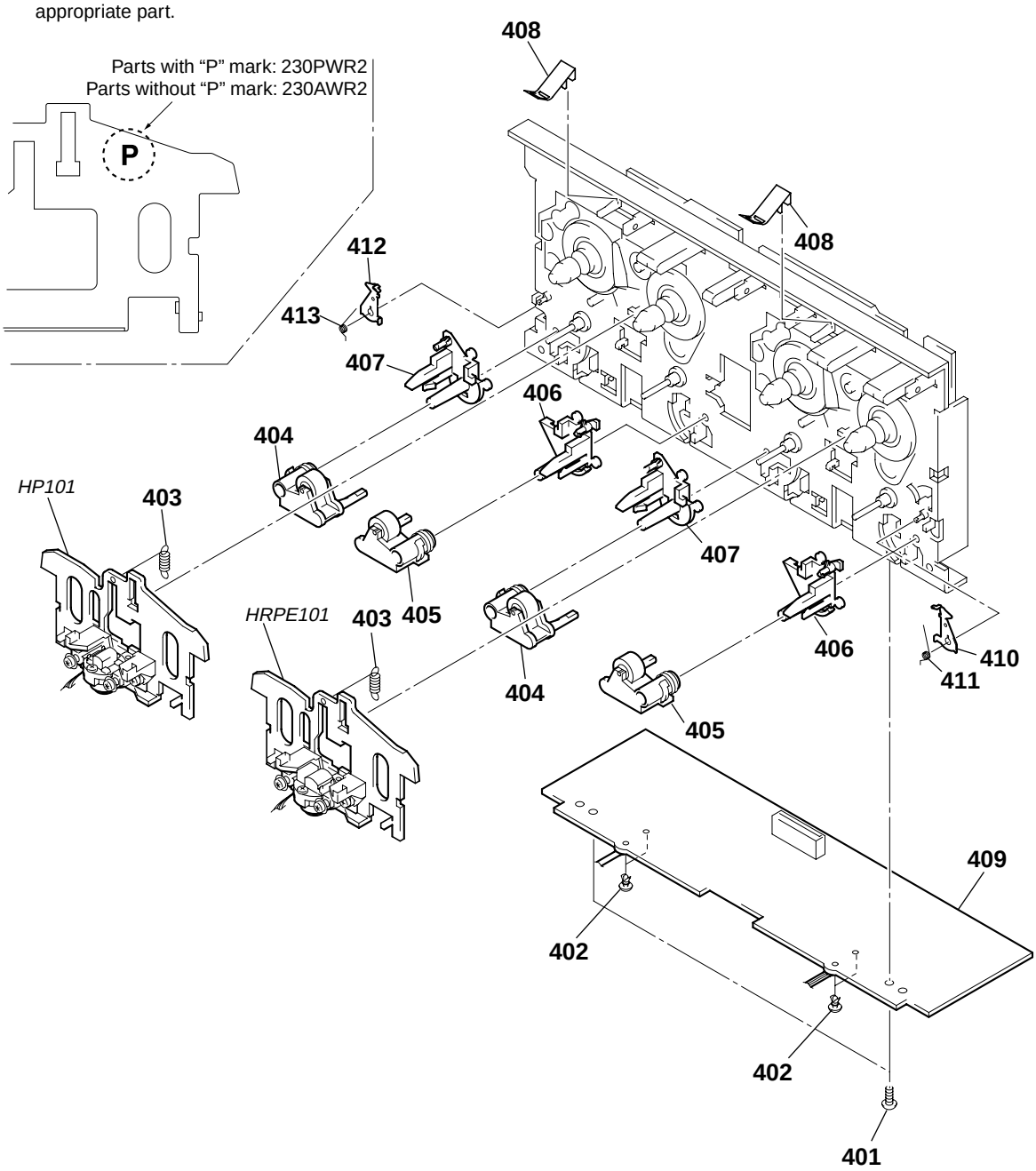


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
⚠301	8-820-020-02	OPTICAL PICK-UP KSS-213D/Q-NP	
302	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	
303	4-917-567-01	GEAR (M)	
304	4-951-940-01	INSULATOR (BU)	
305	4-917-565-01	SHAFT, SLED	
306	4-917-564-01	GEAR (P), FLATNESS	
* 307	A-4724-486-A	BD (CD) BOARD, COMPLETE	
308	4-951-620-01	SCREW (2.6X8), +BVTP	
309	3-713-786-51	SCREW +P 2X3	
M201	X-4917-523-3	MOTOR ASSY (SPINDLE)	
M202	X-4917-504-1	MOTOR ASSY (SLED)	

9-7. TC MECHANISM SECTION-1 (TCM230AWR2/230PWR2)

*NOTE: Two types of parts which are not interchangeable are available for the Head deck (A) ASSY and Head deck (B) ASSY. When replacing the parts, refer to the following figure, and use the appropriate part.

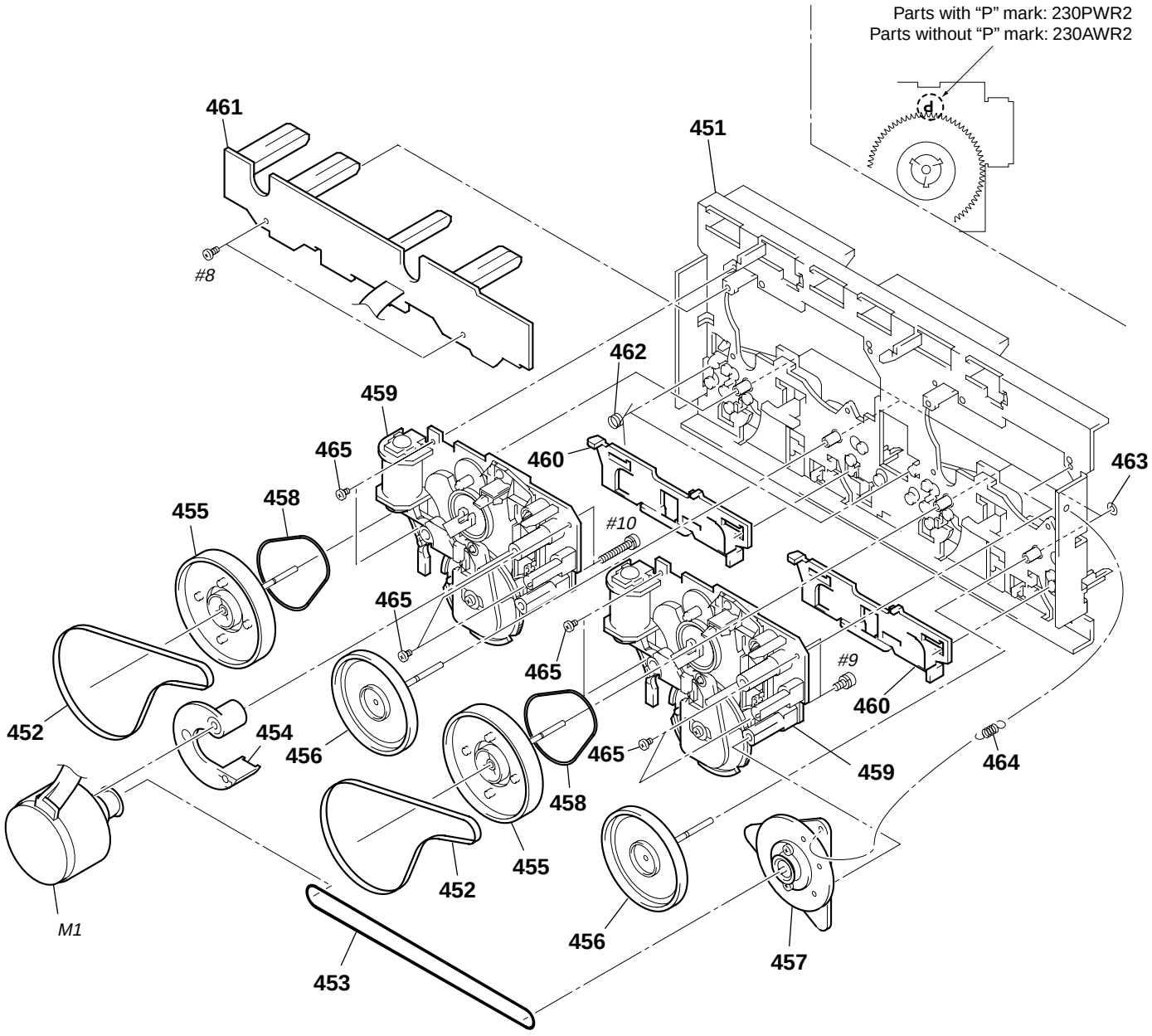


Ref. No.	Part No.	Description	Remark
401	3-376-464-11	SCREW(+PTT 2.6X6),GROUND POINT	
402	3-911-116-21	RIVET, PUSH	
403	3-016-574-11	SPRING (HEAD), TENSION	
404	X-3374-156-4	PINCH LEVER (REV) ASSY	
405	X-3374-155-4	PINCH LEVER (FWD) ASSY	
406	3-016-564-01	BASE (PINCH LEVER FWD)	
407	3-016-565-01	BASE (PINCH LEVER REV)	
408	3-026-892-01	SPRING (CASSETTE), LEAF	
* 409	A-2007-731-A	AUDIO BOARD, COMPLETE	

Ref. No.	Part No.	Description	Remark
410	3-016-573-01	LEVER (EJECT PREVENTION R)	
411	3-032-810-02	SPRING (R), TORSION	
412	3-016-572-01	LEVER (EJECT PREVENTION L)	
413	3-032-809-02	SPRING (L), TORSION	
HP101	A-2056-681-A	DECK (A) ASSY, HEAD (230AWR2)(*NOTE)	
HP101	A-2056-681-B	DECK (A) ASSY, HEAD (230PWR2)(*NOTE)	
HRPE101	A-2056-682-A	DECK (B) ASSY, HEAD (230AWR2)(*NOTE)	
HRPE101	A-2056-682-B	DECK (B) ASSY, HEAD (230PWR2)(*NOTE)	

9-8. TC MECHANISM SECTION-2 (TCM230AWR2/230PWR2)

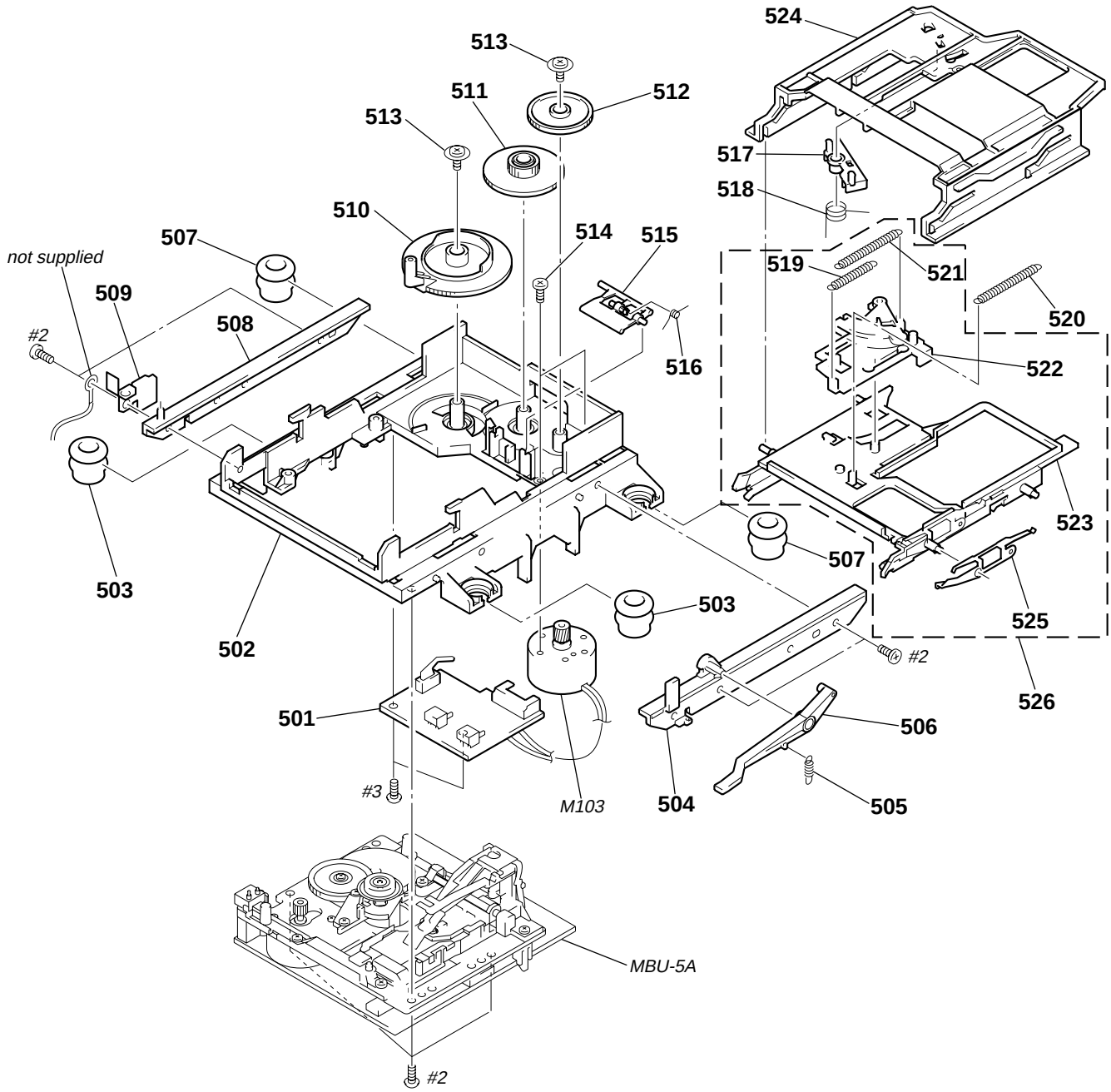
*NOTE: Two types of parts which are not interchangeable are available for the mechanical block assembly. When replacing the parts, refer to the following figure, and use the appropriate part.



Ref. No.	Part No.	Description	Remark
* 451	X-3374-214-3	CHASSIS ASSY, MAIN	
452	3-016-570-01	BELT (CAPSTAN)	
453	3-016-569-01	BELT (TENSION)	
454	3-017-360-01	BRACKET (MOTOR)	
455	X-3376-497-1	FLYWHEEL (FWD) ASSY	
456	X-3374-235-1	FLYWHEEL (REV) ASSY	
457	X-3374-238-1	PULLEY ASSY, TENSION	
458	3-024-405-01	BELT (FR2)	
459	A-2004-629-A	MECHANICAL BLOCK ASSY (230AWR2)(*NOTE)	

Ref. No.	Part No.	Description	Remark
459	A-2004-629-B	MECHANICAL BLOCK ASSY (230PWR2)(*NOTE)	
460	3-016-566-01	SLIDER, REVERSE	
* 461	A-2007-732-A	LEAF SW BOARD, COMPLETE	
462	3-016-575-11	SPRING, TORSION	
463	3-019-208-01	WASHER, STOPPER	
464	3-027-453-01	SPRING (GROUND), TENSION	
465	3-030-823-01	SCREW (+BVTT) (2X3.5)	
M1	A-2004-628-A	MOTOR ASSY, CAPSTAN	

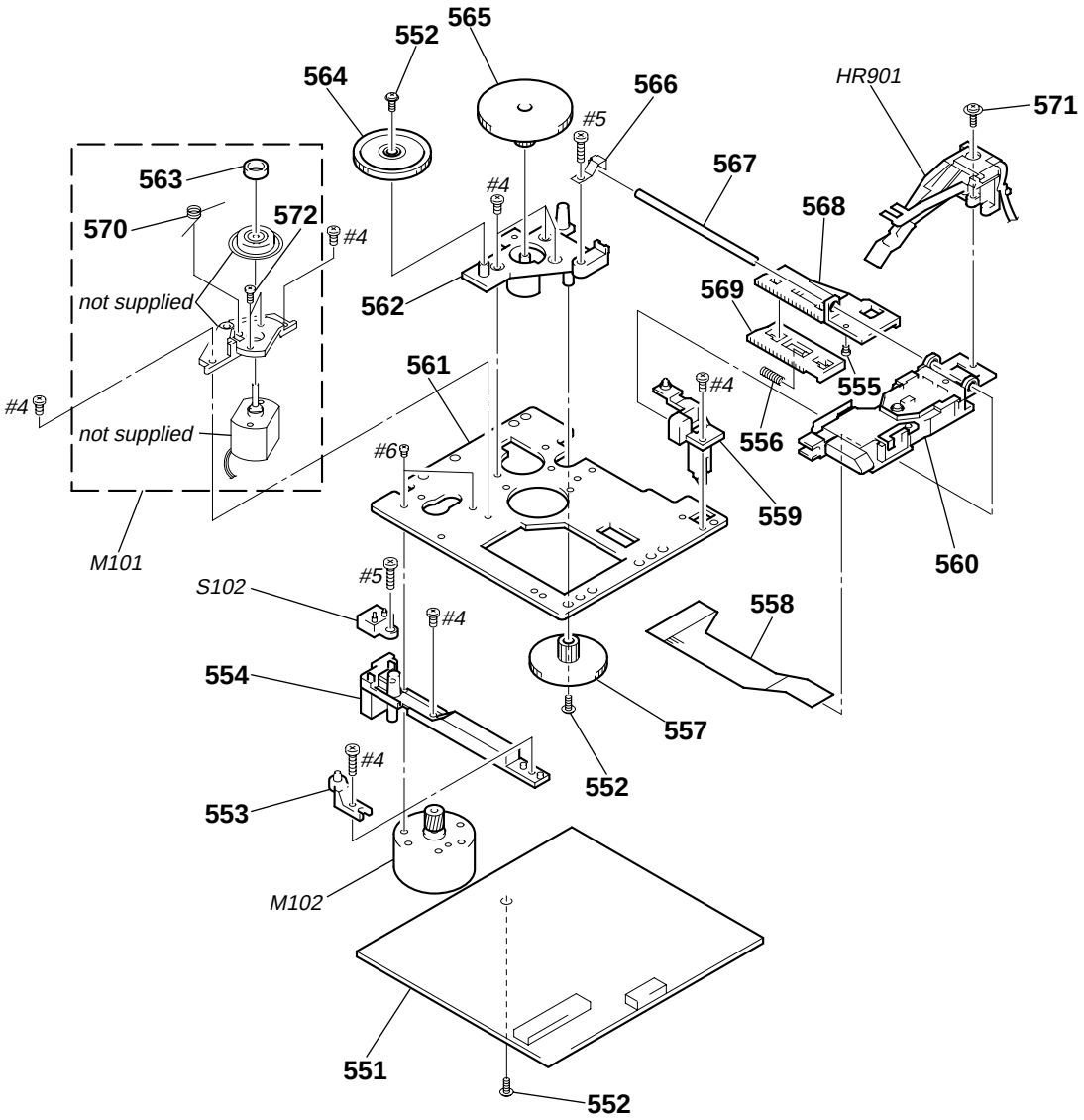
9-9. MD MECHANISM SECTION-1 (MDM-5A)



Ref. No.	Part No.	Description	Remark
* 501	1-671-115-21	SW BOARD	
* 502	4-996-217-01	CHASSIS	
503	4-996-223-11	INSULATOR (F)	
* 504	4-996-218-01	BRACKET (GUIDE R)	
505	4-996-277-01	SPRING (O/C), TENSION	
506	4-996-226-01	LEVER (O/C)	
507	4-999-347-01	INSULATOR (R)	
* 508	4-996-225-01	BRACKET (GUIDE L)	
509	4-988-466-11	SPRING (ELECTROSTATIC), LEAF	
510	4-996-219-01	GEAR (CAM GEAR)	
511	4-996-220-01	GEAR (A)	
512	4-996-221-01	GEAR (B)	
513	4-933-134-01	SCREW (+PTPWH M2.6X6)	
514	4-996-224-01	SCREW (1.7X3), +PWH	

Ref. No.	Part No.	Description	Remark
515	4-996-227-01	LEVER (HEAD)	
516	4-996-229-01	SPRING (HEAD LEVER), TORSION	
517	4-996-212-01	LEVER (LIMITTER)	
518	4-996-213-01	SPRING (LIMITTER), TORSION	
519	4-996-214-01	SPRING (SLIDER), TENSION	
520	4-966-216-01	SPRING (HOLDER), TENSION	
521	4-996-215-11	SPRING (LOCK LEVER), TENSION	
522	X-4949-246-1	SLIDER ASSY	
523	X-4949-245-1	HOLDER ASSY	
* 524	4-996-211-11	SLIDER (CAM)	
525	4-998-763-01	SPRING (SHUTTER), LEAF	
526	A-4680-409-A	HOLDER	
M103	X-4949-264-1	MOTOR ASSY, LOADING	

9-10. MD MECHANISM SECTION-2 (MDM-5A)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
551	A-4699-893-A	BD (MD) BOARD, COMPLETE	
552	3-372-761-01	SCREW (M1.7), TAPPING	
* 553	4-996-267-01	BASE (BU-D)	
* 554	4-996-255-01	BASE (BU-C)	
555	4-900-590-01	SCREW, PRECISION SMALL	
556	4-996-258-01	SPRING, COMPRESSION	
557	4-996-262-01	GEAR (SL-C)	
* 558	1-667-954-11	FLEXIBLE BOARD	
* 559	4-210-664-11	BASE (BU-A)	
⚠560	8-583-028-01	OPTICAL PICK-UP KMS-260A/K1NP	
* 561	4-996-252-01	CHASSIS, BU	
* 562	4-996-254-01	BASE (BU-B)	
563	4-967-688-11	MAGNET, ABSORPTION	

Ref. No.	Part No.	Description	Remark
564	4-996-260-01	GEAR (SL-A)	
565	4-996-261-01	GEAR (SL-B)	
566	4-996-264-01	SPRING (SHAFT), LEAF	
567	4-996-265-01	SHAFT, MAIN	
568	4-996-256-11	SL (BASE)	
569	4-996-257-01	RACK (SL)	
570	4-996-263-01	SPRING (CLV), TORSION	
571	4-988-560-01	SCREW (+P 1.7X6)	
572	4-211-036-01	SCREW (1.7X2.5), +PWH	
HR901	1-500-502-11	HEAD, OVER WRITE	
M101	A-4672-475-A	MOTOR ASSY, SPINDLE	
M102	A-4672-474-A	MOTOR ASSY, SLED	
S102	1-762-148-21	SWITCH, PUSH (2 KEY)	

SECTION 10
ELECTRICAL PARTS LIST

AUDIO

Note:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- SEMICONDUCTORS
  In each case, u: µ , for example:
  uA...: µ A..., uPA...: µ PA..., uPB...: µ PB..., uPC...: µ PC..., uPD...: µ PD...
- CAPACITORS
  uF : µ F
- COILS
  uH : µ H
- Abbreviation
  CND : Canadian model
  G : German model
  HK : Hong Kong model
  SP : Singapore model
  MY : Malaysia model
  AUS : Australian model
  AR : Argentine model
  KR : Korean model

Ref. No.	Part No.	Description			Remark
*	A-2007-731-A	AUDIO BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C301	1-162-289-31	CERAMIC	390PF	10%	50V
C302	1-126-968-11	ELECT	100uF	20%	6.3V
C303	1-162-282-31	CERAMIC	100PF	10%	50V
C304	1-130-483-00	MYLAR	0.01uF	5%	50V
C305	1-107-715-11	ELECT	22uF	20%	16V
C311	1-162-289-31	CERAMIC	390PF	10%	50V
C313	1-162-282-31	CERAMIC	100PF	10%	50V
C314	1-130-487-00	MYLAR	0.022uF	5%	50V
C315	1-126-233-11	ELECT	22uF	20%	50V
C331	1-137-427-11	FILM	120PF	5%	50V
C332	1-162-288-31	CERAMIC	330PF	10%	50V
C333	1-162-209-31	CERAMIC	27PF	5%	50V
C401	1-162-289-31	CERAMIC	390PF	10%	50V
C402	1-126-968-11	ELECT	100uF	20%	6.3V
C403	1-162-282-31	CERAMIC	100PF	10%	50V
C404	1-130-483-00	MYLAR	0.01uF	5%	50V
C405	1-107-715-11	ELECT	22uF	20%	16V
C411	1-162-289-31	CERAMIC	390PF	10%	50V
C413	1-162-282-31	CERAMIC	100PF	10%	50V
C414	1-130-487-00	MYLAR	0.022uF	5%	50V
C415	1-126-233-11	ELECT	22uF	20%	50V
C431	1-137-427-11	FILM	120PF	5%	50V
C432	1-162-288-31	CERAMIC	330PF	10%	50V
C433	1-162-209-31	CERAMIC	27PF	5%	50V
C601	1-104-396-11	ELECT	10uF	20%	16V
C602	1-104-396-11	ELECT	10uF	20%	16V
C611	1-104-396-11	ELECT	10uF	20%	16V
C612	1-104-396-11	ELECT	10uF	20%	16V
C621	1-137-150-11	FILM	0.01uF	5%	100V
C622	1-126-961-11	ELECT	2.2uF	20%	50V
C623	1-136-155-00	FILM	0.015uF	5%	50V
C624	1-130-481-00	MYLAR	0.0068uF	5%	50V
C625	1-130-481-00	MYLAR	0.0068uF	5%	50V
C627	1-124-903-11	ELECT	1uF	20%	50V
C628	1-136-153-00	FILM	0.01uF	5%	50V
C642	1-104-664-11	ELECT	47uF	20%	16V
		< CONNECTOR >			
CN601	1-695-338-11	PIN, CONNECTOR (PC BOARD) 15P			

Ref. No.	Part No.	Description				Remark
		< IC >				
IC601	8-759-111-44	IC UPC4570C-1				
IC602	8-759-143-54	IC UPC1330HA				
IC611	8-759-111-44	IC UPC4570C-1				
		< COIL >				
L331	1-410-780-11	INDUCTOR	27mH			
L431	1-410-780-11	INDUCTOR	27mH			
L601	1-414-193-41	INDUCTOR	220uH			
L602	1-414-193-41	INDUCTOR	220uH			
		< TRANSISTOR >				
Q621	8-729-142-46	TRANSISTOR	2SC2001-LK			
Q622	8-729-142-46	TRANSISTOR	2SC2001-LK			
Q623	8-729-801-93	TRANSISTOR	2SD1387			
		< RESISTOR >				
R301	1-247-881-00	CARBON	120K	5%	1/4W	
R302	1-249-409-11	CARBON	220	5%	1/4W	F
R303	1-249-433-11	CARBON	22K	5%	1/4W	
R304	1-247-889-00	CARBON	270K	5%	1/4W	
R305	1-247-858-11	CARBON	13K	5%	1/4W	
R311	1-247-881-00	CARBON	120K	5%	1/4W	
R312	1-247-807-31	CARBON	100	5%	1/4W	
R314	1-247-882-11	CARBON	130K	5%	1/4W	
R315	1-247-850-11	CARBON	6.2K	5%	1/4W	
R331	1-249-430-11	CARBON	12K	5%	1/4W	
R401	1-247-881-00	CARBON	120K	5%	1/4W	
R402	1-249-409-11	CARBON	220	5%	1/4W	F
R403	1-249-433-11	CARBON	22K	5%	1/4W	
R404	1-247-889-00	CARBON	270K	5%	1/4W	
R405	1-247-858-11	CARBON	13K	5%	1/4W	
R411	1-247-881-00	CARBON	120K	5%	1/4W	
R412	1-247-807-31	CARBON	100	5%	1/4W	
R414	1-247-882-11	CARBON	130K	5%	1/4W	
R415	1-247-850-11	CARBON	6.2K	5%	1/4W	
R431	1-249-430-11	CARBON	12K	5%	1/4W	
R601	1-249-409-11	CARBON	220	5%	1/4W	F
R602	1-249-409-11	CARBON	220	5%	1/4W	F
R608	1-249-409-11	CARBON	220	5%	1/4W	F
R609	1-249-433-11	CARBON	22K	5%	1/4W	
R611	1-249-409-11	CARBON	220	5%	1/4W	F
R612	1-249-409-11	CARBON	220	5%	1/4W	F
⚠R621	1-212-851-00	FUSIBLE	5.6	5%	1/4W	F

Ref. No.	Part No.	Description			Remark
⚠R622	1-212-851-00	FUSIBLE	5.6	5%	1/4W F
R623	1-249-432-11	CARBON	18K	5%	1/4W
R624	1-249-432-11	CARBON	18K	5%	1/4W
R625	1-249-429-11	CARBON	10K	5%	1/4W
		< VARIABLE RESISTOR >			
RV301	1-238-598-11	RES, ADJ, CARBON 2.2K			
RV311	1-238-598-11	RES, ADJ, CARBON 2.2K			
RV341	1-241-768-11	RES, ADJ, CARBON 220K			
RV401	1-238-598-11	RES, ADJ, CARBON 2.2K			
RV411	1-238-598-11	RES, ADJ, CARBON 2.2K			
RV441	1-241-768-11	RES, ADJ, CARBON 220K			
		< TRANSFORMER >			
T621	1-423-980-11	TRANSFORMER, BIAS OSCILLATION			
**********					
*	A-4724-486-A	BD (CD) BOARD, COMPLETE **********			
		< CAPACITOR >			
C101	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C102	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C103	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C104	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C108	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C109	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C110	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C111	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C112	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C113	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C114	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C115	1-126-607-11	ELECT CHIP	47uF	20%	4V
C116	1-126-607-11	ELECT CHIP	47uF	20%	4V
C117	1-126-209-11	ELECT CHIP	100uF	20%	4V
C118	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C119	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C121	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C122	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C123	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C124	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C125	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C126	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C127	1-128-065-11	ELECT CHIP	68uF	20%	10V
C128	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C129	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C130	1-164-346-11	CERAMIC CHIP	1uF		16V
C131	1-124-779-00	ELECT CHIP	10uF	20%	16V
C133	1-164-346-11	CERAMIC CHIP	1uF		16V
C140	1-164-346-11	CERAMIC CHIP	1uF		16V
C141	1-164-346-11	CERAMIC CHIP	1uF		16V
C143	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C151	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C153	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C154	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
C156	1-163-235-11	CERAMIC CHIP	22PF	5%	50V

Ref. No.	Part No.	Description			Remark
C157	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C159	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C161	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C162	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C163	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C165	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C167	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C168	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C171	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C172	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C181	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C182	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
		< CONNECTOR >			
CN101	1-778-874-11	CONNECTOR,FFC(LIF(NON-ZIF))19P			
CN102	1-777-937-11	CONNECTOR, FFC/FPC 16P			
		< FERRITE BEAD >			
FB101	1-500-445-21	FERRITE 0UH			
FB103	1-500-445-21	FERRITE 0UH			
		< IC >			
IC101	8-752-386-85	IC CXD2587Q			
IC102	8-759-549-28	IC BA5974FP-E			
IC103	8-752-085-51	IC CXA2568M-T			
		< TRANSISTOR >			
Q101	8-729-010-08	TRANSISTOR MSB710-R			
		< RESISTOR >			
R101	1-216-077-00	METAL CHIP	15K	5%	1/10W
R102	1-216-097-91	RES,CHIP	100K	5%	1/10W
R103	1-216-077-00	METAL CHIP	15K	5%	1/10W
R104	1-216-085-00	METAL CHIP	33K	5%	1/10W
R105	1-216-073-00	METAL CHIP	10K	5%	1/10W
R106	1-216-049-91	RES,CHIP	1K	5%	1/10W
R107	1-216-073-00	METAL CHIP	10K	5%	1/10W
R108	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R109	1-216-121-91	RES,CHIP	1M	5%	1/10W
R110	1-216-025-91	RES,CHIP	100	5%	1/10W
R111	1-216-121-91	RES,CHIP	1M	5%	1/10W
R113	1-216-121-91	RES,CHIP	1M	5%	1/10W
R114	1-216-073-00	METAL CHIP	10K	5%	1/10W
R116	1-216-001-00	METAL CHIP	10	5%	1/10W
R117	1-216-049-91	RES,CHIP	1K	5%	1/10W
R119	1-216-041-00	METAL CHIP	470	5%	1/10W
R123	1-216-073-00	METAL CHIP	10K	5%	1/10W
R124	1-216-097-91	RES,CHIP	100K	5%	1/10W
R131	1-216-033-00	METAL CHIP	220	5%	1/10W
R143	1-216-103-00	METAL CHIP	180K	5%	1/10W
R144	1-216-103-00	METAL CHIP	180K	5%	1/10W
R147	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R148	1-216-001-00	METAL CHIP	10	5%	1/10W
R149	1-216-001-00	METAL CHIP	10	5%	1/10W
R158	1-216-111-00	METAL CHIP	390K	5%	1/10W
R159	1-216-101-00	METAL CHIP	150K	5%	1/10W

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remark
R161	1-216-308-00	METAL CHIP	4.7	5%	1/10W
R162	1-216-101-00	METAL CHIP	150K	5%	1/10W
R171	1-216-078-00	RES,CHIP	16K	5%	1/10W
R172	1-216-073-00	METAL CHIP	10K	5%	1/10W
R173	1-216-077-00	METAL CHIP	15K	5%	1/10W
R181	1-216-078-00	RES,CHIP	16K	5%	1/10W
R182	1-216-073-00	METAL CHIP	10K	5%	1/10W
R183	1-216-077-00	METAL CHIP	15K	5%	1/10W
		< NETWORK >			
RN101	1-233-576-11	RES, CHIP NETWORK 100			
RN102	1-233-576-11	RES, CHIP NETWORK 100			
		< SWITCH >			
S101	1-572-085-11	SWITCH, LEAF (LIMIT IN SW)			
		< VIBRATOR >			
X101	1-767-408-21	VIBRATOR, CRYSTAL (16.9344MHz)			
**********					
	A-4699-893-A	BD (MD) BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-125-822-11	TANTALUM	10uF	20%	10V
C102	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C103	1-125-822-11	TANTALUM	10uF	20%	10V
C104	1-125-822-11	TANTALUM	10uF	20%	10V
C105	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C106	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C107	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C108	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C109	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C111	1-164-344-11	CERAMIC CHIP	0.068uF	10%	25V
C112	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C113	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C115	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C116	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C117	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C118	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C119	1-125-822-11	TANTALUM	10uF	20%	10V
C121	1-125-822-11	TANTALUM	10uF	20%	10V
C122	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C123	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C124	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C127	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C128	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C129	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C130	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C131	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C132	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C133	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C134	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C135	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C136	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C142	1-163-251-11	CERAMIC CHIP	100PF	5%	50V

Ref. No.	Part No.	Description			Remark
C143	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C144	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C146	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C151	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C152	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C153	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C156	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C158	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C160	1-104-601-11	ELECT CHIP	10uF	20%	10V
C161	1-104-601-11	ELECT CHIP	10uF	20%	10V
C163	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C164	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C167	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C168	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C169	1-125-822-11	TANTALUM	10uF	20%	10V
C171	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C181	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C183	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C184	1-117-970-11	ELECT CHIP	22uF	20%	10V
C185	1-164-611-11	CERAMIC CHIP	0.001uF	10%	500V
C187	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C188	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C189	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C190	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C191	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C196	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C197	1-163-038-91	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CN101	1-569-479-21	CONNECTOR, FPC 21P			
CN102	1-784-833-21	CONNECTOR,FFC(LIF(NON-ZIF))21P			
CN103	1-784-834-21	CONNECTOR,FFC(LIF(NON-ZIF))23P			
CN104	1-770-687-11	CONNECTOR, FFC/FPC 4P			
CN110	1-695-440-21	PIN, CONNECTOR (PC BOARD) 6P			
		< DIODE >			
D101	8-719-988-61	DIODE 1SS355TE-17			
D181	8-719-046-86	DIODE F1J6TP			
D183	8-719-046-86	DIODE F1J6TP			
		< IC >			
IC101	8-752-080-95	IC CXA2523AR			
IC103	8-729-903-10	IC TRANSISTOR FMW1			
IC121	8-752-389-44	IC CXD2654R			
IC123	8-759-096-87	IC TC7WU04FU(TE12R)			
IC124	8-759-498-44	IC MSM51V4400-70TS-K			
IC152	8-759-430-25	IC BH6511FS-E2			
IC171	8-759-487-04	IC BR24C02F-E2			
IC181	8-759-481-17	IC MC74ACT08DTR2			
IC192	8-759-460-72	IC BA033FP-E2			
		< COIL >			
L101	1-414-813-11	FERRITE	0uH		
L102	1-414-813-11	FERRITE	0uH		
L103	1-414-813-11	FERRITE	0uH		
L105	1-414-813-11	FERRITE	0uH		
L106	1-414-813-11	FERRITE	0uH		

Ref. No.	Part No.	Description			Remark
L121	1-414-813-11	FERRITE	0uH		
L122	1-414-813-11	FERRITE	0uH		
L151	1-412-029-11	INDUCTOR CHIP	10uH		
L152	1-412-029-11	INDUCTOR CHIP	10uH		
L153	1-412-032-11	INDUCTOR CHIP	100uH		
L154	1-412-032-11	INDUCTOR CHIP	100uH		
L161	1-414-813-11	FERRITE	0uH		
L162	1-414-813-11	FERRITE	0uH		
L181	1-216-295-91	SHORT	0		
		< TRANSISTOR >			
Q101	8-729-403-35	TRANSISTOR	UN5113		
Q102	8-729-026-53	TRANSISTOR	2SA1576A-T106-QR		
Q103	8-729-402-93	TRANSISTOR	UN5214		
Q104	8-729-402-93	TRANSISTOR	UN5214		
Q162	8-729-101-07	TRANSISTOR	2SB798-DL		
Q163	8-729-403-35	TRANSISTOR	UN5113		
Q181	8-729-018-75	TRANSISTOR	2SJ278MY		
Q182	8-729-017-65	TRANSISTOR	2SK1764KY		
		< RESISTOR >			
R103	1-216-049-91	RES,CHIP	1K	5%	1/10W
R104	1-216-073-00	METAL CHIP	10K	5%	1/10W
R105	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R106	1-216-133-00	METAL CHIP	3.3M	5%	1/10W
R107	1-216-113-00	METAL CHIP	470K	5%	1/10W
R109	1-216-295-91	SHORT	0		
R110	1-216-073-00	METAL CHIP	10K	5%	1/10W
R111	1-216-295-91	SHORT	0		
R112	1-216-089-91	RES,CHIP	47K	5%	1/10W
R113	1-216-049-91	RES,CHIP	1K	5%	1/10W
R115	1-216-049-91	RES,CHIP	1K	5%	1/10W
R117	1-216-113-00	METAL CHIP	470K	5%	1/10W
R120	1-216-025-91	RES,CHIP	100	5%	1/10W
R121	1-216-097-91	RES,CHIP	100K	5%	1/10W
R123	1-216-295-91	SHORT	0		
R124	1-216-025-91	RES,CHIP	100	5%	1/10W
R125	1-216-025-91	RES,CHIP	100	5%	1/10W
R127	1-216-025-91	RES,CHIP	100	5%	1/10W
R129	1-216-295-91	SHORT	0		
R131	1-216-073-00	METAL CHIP	10K	5%	1/10W
R132	1-216-097-91	RES,CHIP	100K	5%	1/10W
R133	1-216-117-00	METAL CHIP	680K	5%	1/10W
R134	1-216-049-91	RES,CHIP	1K	5%	1/10W
R135	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R136	1-216-049-91	RES,CHIP	1K	5%	1/10W
R137	1-216-295-91	SHORT	0		
R140	1-216-029-00	METAL CHIP	150	5%	1/10W
R142	1-216-073-00	METAL CHIP	10K	5%	1/10W
R143	1-216-073-00	METAL CHIP	10K	5%	1/10W
R144	1-216-025-91	RES,CHIP	100	5%	1/10W
R145	1-216-073-00	METAL CHIP	10K	5%	1/10W
R146	1-216-037-00	METAL CHIP	330	5%	1/10W
R147	1-216-025-91	RES,CHIP	100	5%	1/10W
R148	1-216-045-00	METAL CHIP	680	5%	1/10W
R149	1-216-073-00	METAL CHIP	10K	5%	1/10W
R150	1-216-295-91	SHORT	0		

Ref. No.	Part No.	Description			Remark
R151	1-216-073-00	METAL CHIP	10K	5%	1/10W
R152	1-216-073-00	METAL CHIP	10K	5%	1/10W
R158	1-216-097-91	RES,CHIP	100K	5%	1/10W
R159	1-216-097-91	RES,CHIP	100K	5%	1/10W
R160	1-216-295-91	SHORT	0		
R161	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R162	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R163	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R164	1-216-045-00	METAL CHIP	680	5%	1/10W
R165	1-216-097-91	RES,CHIP	100K	5%	1/10W
R166	1-220-149-11	REGISTER	2.2	10%	1/2W
R167	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R169	1-219-724-11	METAL CHIP	1	1%	1/4W
R170	1-216-073-00	METAL CHIP	10K	5%	1/10W
R171	1-216-073-00	METAL CHIP	10K	5%	1/10W
R173	1-216-121-91	RES,CHIP	1M	5%	1/10W
R175	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R177	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R179	1-216-085-00	METAL CHIP	33K	5%	1/10W
R180	1-216-073-00	METAL CHIP	10K	5%	1/10W
R182	1-216-089-91	RES,CHIP	47K	5%	1/10W
R183	1-216-089-91	RES,CHIP	47K	5%	1/10W
R184	1-216-073-00	METAL CHIP	10K	5%	1/10W
R185	1-216-081-00	METAL CHIP	22K	5%	1/10W
R186	1-216-089-91	RES,CHIP	47K	5%	1/10W
R188	1-216-073-00	METAL CHIP	10K	5%	1/10W
R189	1-216-073-00	METAL CHIP	10K	5%	1/10W
R190	1-216-073-00	METAL CHIP	10K	5%	1/10W
R195	1-216-073-00	METAL CHIP	10K	5%	1/10W
R196	1-216-295-91	SHORT	0		
R197	1-216-295-91	SHORT	0		
		< SWITCH >			
S101	1-762-596-21	SWITCH, PUSH (1 KEY)(LIMIT IN)			

****

	A-4419-325-A	CD PANEL BOARD, COMPLETE (AEP,UK,G,CIS)	
		**********	
	A-4419-498-A	CD PANEL BOARD, COMPLETE	
		**********	
		(EXCEPT AEP,UK,G,CIS)	
		(CD PANEL BOARD is supplied with MD LINK SW and POWER SW board.)	
		< DIODE >	
D752	8-719-063-93	DIODE	SLR325VC-N-T32 ((MD) REC)
D754	8-719-056-13	DIODE	SML79423C-TP15 (DISC 1 IN/PLAY)
D755	8-719-056-13	DIODE	SML79423C-TP15 (DISC 2 IN/PLAY)
D756	8-719-056-13	DIODE	SML79423C-TP15 (DISC 3 IN/PLAY)
		< SWITCH >	
S751	1-762-875-21	SWITCH, KEYBOARD (I/⏻)	
S752	1-762-875-21	SWITCH, KEYBOARD (POWER SAVE/DEMO (STANDBY))	
S753	1-762-875-21	SWITCH, KEYBOARD ((MD) REC)	
S754	1-762-875-21	SWITCH, KEYBOARD (REC IT)	
S755	1-762-875-21	SWITCH, KEYBOARD (CD-MD SYNC)	

Ref. No.	Part No.	Description				Remark
S756	1-762-875-21	SWITCH, KEYBOARD (DISC SKIP/EXCHANGE)				
S757	1-762-875-21	SWITCH, KEYBOARD (DISC 1)				
S758	1-762-875-21	SWITCH, KEYBOARD (DISC 2)				
S759	1-762-875-21	SWITCH, KEYBOARD (DISC 3)				
S760	1-762-875-21	SWITCH, KEYBOARD (≙ (CD))				
S761	1-762-875-21	SWITCH, KEYBOARD (≙ (MD))				
		< TRANSISTOR >				
Q751	8-729-900-80	TRANSISTOR DTC114ES				
Q752	8-729-900-80	TRANSISTOR DTC114ES				
Q753	8-729-900-80	TRANSISTOR DTC114ES				
Q754	8-729-900-80	TRANSISTOR DTC114ES				
		< RESISTOR >				
R749	1-249-407-11	CARBON	150	5%	1/4W	F
R751	1-249-410-11	CARBON	270	5%	1/4W	F
R752	1-249-411-11	CARBON	330	5%	1/4W	
R753	1-249-413-11	CARBON	470	5%	1/4W	F
R754	1-249-414-11	CARBON	560	5%	1/4W	F
R755	1-249-415-11	CARBON	680	5%	1/4W	F
R756	1-249-417-11	CARBON	1K	5%	1/4W	F
R757	1-249-418-11	CARBON	1.2K	5%	1/4W	F
R758	1-249-420-11	CARBON	1.8K	5%	1/4W	F
R759	1-249-422-11	CARBON	2.7K	5%	1/4W	F
R760	1-247-843-11	CARBON	3.3K	5%	1/4W	
R761	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R764	1-247-804-11	CARBON	75	5%	1/4W	
R765	1-247-804-11	CARBON	75	5%	1/4W	F
R766	1-247-804-11	CARBON	75	5%	1/4W	
R767	1-247-804-11	CARBON	75	5%	1/4W	F
R768	1-247-804-11	CARBON	75	5%	1/4W	
R769	1-247-804-11	CARBON	75	5%	1/4W	F
**********						
*	1-658-575-11	CONNECTOR BOARD				
		**********				
		< CONNECTOR >				
* CN701	1-568-946-11	PIN, CONNECTOR 8P				
CN702	1-750-413-11	CONNECTOR, FFC/FPC 8P				
		< TRANSISTOR >				
Q701	8-729-900-80	TRANSISTOR DTC114ES				
		< RESISTOR >				
R703	1-249-435-11	CARBON	33K	5%	1/4W	
R704	1-249-429-11	CARBON	10K	5%	1/4W	
R705	1-249-417-11	CARBON	1K	5%	1/4W	F
**********						

Ref. No.	Part No.	Description				Remark
	A-4419-324-A	DISPLAY BOARD, COMPLETE (AEP,UK,G,CIS)				
		**********				
	A-4419-497-A	DISPLAY BOARD, COMPLETE				
		**********				
		(EXCEPT AEP,UK,G,CIS)				
		(DISPLAY BOARD is supplied with JOG board and VOL board)				
*	4-214-439-11	HOLDER, FL TUBE				
		< CAPACITOR >				
C601	1-124-589-11	ELECT	47uF	20%	16V	
C602	1-126-163-11	ELECT	4.7uF	20%	50V	
C603	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C604	1-164-294-31	CERAMIC	1000PF	10%	50V	
C605	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C606	1-126-160-11	ELECT	1uF	20%	50V	
C607	1-126-160-11	ELECT	1uF	20%	50V	
C608	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C609	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C610	1-124-589-11	ELECT	47uF	20%	16V	
C611	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C612	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C613	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C614	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C615	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C616	1-126-157-11	ELECT	10uF	20%	16V	
C617	1-162-303-11	CERAMIC	0.0033uF	30%	16V	
C618	1-126-157-11	ELECT	10uF	20%	16V	
C619	1-126-157-11	ELECT	10uF	20%	16V	
C620	1-126-163-11	ELECT	4.7uF	20%	50V	
C625	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C629	1-126-157-11	ELECT	10uF	20%	16V	
C651	1-162-282-31	CERAMIC	100PF	10%	50V	
C652	1-162-282-31	CERAMIC	100PF	10%	50V	
C653	1-162-282-31	CERAMIC	100PF	10%	50V	
C654	1-162-282-31	CERAMIC	100PF	10%	50V	
C655	1-162-282-31	CERAMIC	100PF	10%	50V	
C656	1-162-282-31	CERAMIC	100PF	10%	50V	
C657	1-162-282-31	CERAMIC	100PF	10%	50V	
C658	1-162-282-31	CERAMIC	100PF	10%	50V	
C659	1-162-282-31	CERAMIC	100PF	10%	50V	
C660	1-162-282-31	CERAMIC	100PF	10%	50V	
C661	1-162-282-31	CERAMIC	100PF	10%	50V	
C662	1-162-282-31	CERAMIC	100PF	10%	50V	
C663	1-162-282-31	CERAMIC	100PF	10%	50V	
C664	1-162-282-31	CERAMIC	100PF	10%	50V	
C665	1-162-282-31	CERAMIC	100PF	10%	50V	
C666	1-162-282-31	CERAMIC	100PF	10%	50V	
C667	1-162-282-31	CERAMIC	100PF	10%	50V	
C668	1-162-282-31	CERAMIC	100PF	10%	50V	
C701	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C702	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C703	1-164-159-11	CERAMIC	0.1uF		50V	
C731	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C732	1-124-257-00	ELECT	2.2uF	20%	50V	
C733	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C734	1-162-215-31	CERAMIC	47PF	5%	50V	

DISPLAY

Ref. No.	Part No.	Description			Remark
C735	1-124-261-00	ELECT	10uF	20%	50V
C736	1-162-290-31	CERAMIC	470PF	10%	50V
C737	1-124-463-00	ELECT	0.1uF	20%	50V
C739	1-162-215-31	CERAMIC	47PF	5%	50V
C741	1-124-261-00	ELECT	10uF	20%	50V
C742	1-162-282-31	CERAMIC	100PF	10%	50V
C743	1-124-257-00	ELECT	2.2uF	20%	50V
C747	1-164-159-11	CERAMIC	0.1uF		50V
		< CONNECTOR >			
CN601	1-568-865-21	SOCKET, CONNECTOR 23P			
		< DIODE >			
D610	8-719-050-84	DIODE RB441QT-77			
D611	8-719-057-97	DIODE SEL5923A-TP15 (SYNC BASE H)			
D612	8-719-057-97	DIODE SEL5923A-TP15 (SYNC BASE L)			
D613	8-719-073-47	DIODE SML72923C-TP15 (REC/PAUSE)			
D614	8-719-056-13	DIODE SML79423C-TP15 (MD PLAY/PAUSE)			
D615	8-719-056-13	DIODE SML79423C-TP15 (CD PLAY/PAUSE)			
D616	8-719-063-93	DIODE SLR325VC-N-T32 (NON STOP)			
D617	8-719-063-93	DIODE SLR325VC-N-T32 (ENTER/NEXT)			
D618	8-719-057-97	DIODE SEL5923A-TP15 (GROOVE)			
D619	8-719-063-93	DIODE SLR325VC-N-T32 (JOG)			
D620	8-719-057-97	DIODE SEL5923A-TP15 (+ ▶▶)			
D621	8-719-057-97	DIODE SEL5923A-TP15 (- ◀◀)			
D622	8-719-058-03	DIODE SEL5423E-TP15 (▶ TAPE B)			
D623	8-719-058-03	DIODE SEL5423E-TP15 (◀ TAPE B)			
D624	8-719-058-03	DIODE SEL5423E-TP15 (▶ TAPE A)			
D625	8-719-058-03	DIODE SEL5423E-TP15 (◀ TAPE A)			
D626	8-719-057-97	DIODE SEL5923A-TP15 (SYNC EQ)			
D627	8-719-063-93	DIODE SLR325VC-N-T32 (EFFECT)			
D628	8-719-063-93	DIODE SLR325VC-N-T32 (TIMER SELECT)			
D629	8-719-057-97	DIODE SEL5923A-TP15 (SYNC BASE H)			
D630	8-719-057-97	DIODE SEL5923A-TP15 (SYNC BASE L)			
D631	8-719-057-97	DIODE SEL5923A-TP15 (SYNC EQ)			
D632	8-719-063-93	DIODE SLR325VC-N-T32 (EFFECT)			
		< EARTH TERMINAL >			
* E601	1-537-738-21	TERMINAL, EARTH			
		< FERRITE BEAD >			
FB601	1-412-473-21	INDUCTOR	0UH		
FB602	1-412-473-21	INDUCTOR	0UH		
		< FLUORESCENT INDICATOR >			
FL601	1-517-841-11	INDICATOR TUBE, FLUORESCENT			
		< IC >			
IC601	8-759-582-73	IC TMP88CS77F-6003			
IC602	8-749-011-05	IC GP1U28X			
IC603	8-759-083-77	IC BA3830F			
IC712	8-759-634-51	IC M5218AP			
		< JACK >			
J701	1-785-569-11	JACK (SMALL TYPE)(HEADPHONES)			
J711	1-785-569-11	JACK (SMALL TYPE)(MIX MIC)			

Ref. No.	Part No.	Description			Remark
		< COIL >			
L601	1-410-509-11	INDUCTOR	10uH		
		< TRANSISTOR >			
Q601	8-729-118-00	TRANSISTOR	2SB1116-L		
Q602	8-729-118-00	TRANSISTOR	2SB1116-L		
Q603	8-729-119-78	TRANSISTOR	2SC403SP-51		
Q604	8-729-900-80	TRANSISTOR	DTC114ES		
Q605	8-729-900-80	TRANSISTOR	DTC114ES		
Q606	8-729-900-80	TRANSISTOR	DTC114ES		
Q607	8-729-900-80	TRANSISTOR	DTC114ES		
Q608	8-729-900-80	TRANSISTOR	DTC114ES		
Q609	8-729-900-80	TRANSISTOR	DTC114ES		
Q610	8-729-900-80	TRANSISTOR	DTC114ES		
Q611	8-729-900-80	TRANSISTOR	DTC114ES		
Q612	8-729-900-80	TRANSISTOR	DTC114ES		
Q613	8-729-900-80	TRANSISTOR	DTC114ES		
Q614	8-729-900-80	TRANSISTOR	DTC114ES		
Q615	8-729-900-80	TRANSISTOR	DTC114ES		
Q616	8-729-900-74	TRANSISTOR	DTC143TS		
Q617	8-729-900-74	TRANSISTOR	DTC143TS		
Q618	8-729-900-74	TRANSISTOR	DTC143TS		
Q619	8-729-900-74	TRANSISTOR	DTC143TS		
		< RESISTOR >			
R600	1-247-903-00	CARBON	1M	5%	1/4W
R601	1-247-807-31	CARBON	100	5%	1/4W
R602	1-247-843-11	CARBON	3.3K	5%	1/4W
R603	1-247-807-31	CARBON	100	5%	1/4W
R604	1-247-807-31	CARBON	100	5%	1/4W
R605	1-247-843-11	CARBON	3.3K	5%	1/4W
R606	1-249-401-11	CARBON	47	5%	1/4W F
R607	1-247-893-11	CARBON	390K	5%	1/4W
R608	1-247-889-00	CARBON	270K	5%	1/4W
R609	1-249-441-11	CARBON	100K	5%	1/4W
R610	1-249-429-11	CARBON	10K	5%	1/4W
R611	1-249-441-11	CARBON	100K	5%	1/4W
R612	1-249-401-11	CARBON	47	5%	1/4W F
R613	1-249-435-11	CARBON	33K	5%	1/4W
R614	1-247-895-00	CARBON	470K	5%	1/4W
R616	1-249-441-11	CARBON	100K	5%	1/4W
R617	1-249-441-11	CARBON	100K	5%	1/4W
R618	1-249-441-11	CARBON	100K	5%	1/4W
R619	1-249-441-11	CARBON	100K	5%	1/4W
R620	1-249-429-11	CARBON	10K	5%	1/4W
R621	1-249-429-11	CARBON	10K	5%	1/4W
R622	1-249-410-11	CARBON	270	5%	1/4W F
R623	1-249-411-11	CARBON	330	5%	1/4W
R624	1-249-413-11	CARBON	470	5%	1/4W F
R625	1-249-414-11	CARBON	560	5%	1/4W F
R626	1-249-415-11	CARBON	680	5%	1/4W F
R627	1-249-417-11	CARBON	1K	5%	1/4W F
R628	1-249-418-11	CARBON	1.2K	5%	1/4W F
R629	1-249-420-11	CARBON	1.8K	5%	1/4W F
R630	1-249-422-11	CARBON	2.7K	5%	1/4W F
R631	1-247-843-11	CARBON	3.3K	5%	1/4W

Ref. No.	Part No.	Description			Remark
R632	1-249-425-11	CARBON	4.7K	5%	1/4W F
R633	1-249-427-11	CARBON	6.8K	5%	1/4W F
R634	1-249-429-11	CARBON	10K	5%	1/4W
R635	1-249-429-11	CARBON	10K	5%	1/4W
R636	1-249-410-11	CARBON	270	5%	1/4W F
R637	1-249-411-11	CARBON	330	5%	1/4W
R638	1-249-413-11	CARBON	470	5%	1/4W F
R639	1-249-414-11	CARBON	560	5%	1/4W F
R640	1-249-415-11	CARBON	680	5%	1/4W F
R641	1-249-417-11	CARBON	1K	5%	1/4W F
R642	1-249-418-11	CARBON	1.2K	5%	1/4W F
R643	1-249-420-11	CARBON	1.8K	5%	1/4W F
R644	1-249-422-11	CARBON	2.7K	5%	1/4W F
R645	1-247-843-11	CARBON	3.3K	5%	1/4W
R646	1-249-425-11	CARBON	4.7K	5%	1/4W F
R647	1-249-427-11	CARBON	6.8K	5%	1/4W F
R648	1-249-429-11	CARBON	10K	5%	1/4W
R649	1-249-429-11	CARBON	10K	5%	1/4W
R650	1-249-410-11	CARBON	270	5%	1/4W F
R651	1-249-411-11	CARBON	330	5%	1/4W
R652	1-249-413-11	CARBON	470	5%	1/4W F
R653	1-249-414-11	CARBON	560	5%	1/4W F
R654	1-249-415-11	CARBON	680	5%	1/4W F
R655	1-249-417-11	CARBON	1K	5%	1/4W F
R656	1-249-418-11	CARBON	1.2K	5%	1/4W F
R657	1-249-420-11	CARBON	1.8K	5%	1/4W F
R658	1-249-422-11	CARBON	2.7K	5%	1/4W F
R659	1-247-843-11	CARBON	3.3K	5%	1/4W
R660	1-249-425-11	CARBON	4.7K	5%	1/4W F
R661	1-249-427-11	CARBON	6.8K	5%	1/4W F
R662	1-249-429-11	CARBON	10K	5%	1/4W
R663	1-249-417-11	CARBON	1K	5%	1/4W F
R664	1-249-417-11	CARBON	1K	5%	1/4W F
R670	1-249-414-11	CARBON	560	5%	1/4W F
R671	1-249-432-11	CARBON	18K	5%	1/4W
R672	1-249-418-11	CARBON	1.2K	5%	1/4W F
R673	1-249-426-11	CARBON	5.6K	5%	1/4W
R674	1-249-418-11	CARBON	1.2K	5%	1/4W F
R675	1-247-843-11	CARBON	3.3K	5%	1/4W
R676	1-249-417-11	CARBON	1K	5%	1/4W F
R677	1-249-407-11	CARBON	150	5%	1/4W F
R678	1-249-407-11	CARBON	150	5%	1/4W F
R679	1-249-407-11	CARBON	150	5%	1/4W F
R680	1-249-407-11	CARBON	150	5%	1/4W F
R681	1-247-804-11	CARBON	75	5%	1/4W
R682	1-249-407-11	CARBON	150	5%	1/4W F
R683	1-247-804-11	CARBON	75	5%	1/4W
R684	1-249-407-11	CARBON	150	5%	1/4W F
R685	1-249-407-11	CARBON	150	5%	1/4W F
R686	1-249-407-11	CARBON	150	5%	1/4W F
R687	1-249-407-11	CARBON	150	5%	1/4W F
R688	1-249-407-11	CARBON	150	5%	1/4W F
R689	1-249-407-11	CARBON	150	5%	1/4W F
R690	1-249-407-11	CARBON	150	5%	1/4W F
R691	1-247-804-11	CARBON	75	5%	1/4W
R692	1-247-804-11	CARBON	75	5%	1/4W
R693	1-247-804-11	CARBON	75	5%	1/4W
R694	1-247-804-11	CARBON	75	5%	1/4W
R695	1-249-407-11	CARBON	150	5%	1/4W F
R696	1-249-407-11	CARBON	150	5%	1/4W F
R697	1-249-407-11	CARBON	150	5%	1/4W F
R698	1-249-407-11	CARBON	150	5%	1/4W F
R699	1-249-407-11	CARBON	150	5%	1/4W F
R700	1-249-407-11	CARBON	150	5%	1/4W F
R701	1-249-429-11	CARBON	10K	5%	1/4W
R702	1-249-429-11	CARBON	10K	5%	1/4W
R703	1-249-429-11	CARBON	10K	5%	1/4W
R704	1-249-429-11	CARBON	10K	5%	1/4W
R705	1-249-429-11	CARBON	10K	5%	1/4W
R706	1-249-429-11	CARBON	10K	5%	1/4W
R707	1-249-429-11	CARBON	10K	5%	1/4W
R708	1-249-429-11	CARBON	10K	5%	1/4W
R709	1-249-429-11	CARBON	10K	5%	1/4W
R710	1-249-429-11	CARBON	10K	5%	1/4W
R711	1-249-429-11	CARBON	10K	5%	1/4W
R721	1-249-429-11	CARBON	10K	5%	1/4W
R722	1-249-417-11	CARBON	1K	5%	1/4W F
R723	1-249-441-11	CARBON	100K	5%	1/4W
R724	1-249-417-11	CARBON	1K	5%	1/4W F
R725	1-249-433-11	CARBON	22K	5%	1/4W
R726	1-249-429-11	CARBON	10K	5%	1/4W
R728	1-247-885-00	CARBON	180K	5%	1/4W
R729	1-247-807-31	CARBON	100	5%	1/4W
R731	1-249-440-11	CARBON	82K	5%	1/4W
R732	1-249-437-11	CARBON	47K	5%	1/4W
R733	1-249-440-11	CARBON	82K	5%	1/4W
R734	1-249-417-11	CARBON	1K	5%	1/4W F
R735	1-249-420-11	CARBON	1.8K	5%	1/4W F

< VARIABLE RESISTOR >

RV712	1-225-739-11	RES, VAR 50K (MIC VOL)

< SWITCH >

S611	1-762-875-21	SWITCH, KEYBOARD (TUNER/BAND)
S612	1-762-875-21	SWITCH, KEYBOARD (►II MD)
S613	1-762-875-21	SWITCH, KEYBOARD (SYNC EQ)
S614	1-762-875-21	SWITCH, KEYBOARD (SYNC BASE)
S615	1-762-875-21	SWITCH, KEYBOARD (REC PAUSE/START)
S616	1-762-875-21	SWITCH, KEYBOARD (HI-DUB)
S617	1-762-875-21	SWITCH, KEYBOARD (CD-TAPE SYNC)
S618	1-762-875-21	SWITCH, KEYBOARD (SURROUND)
S619	1-762-875-21	SWITCH, KEYBOARD (GROOVE)
S620	1-762-875-21	SWITCH, KEYBOARD (DBFB)
S621	1-762-875-21	SWITCH, KEYBOARD (ENTER/YES)
S622	1-762-875-21	SWITCH, KEYBOARD (+ ►►)
S623	1-762-875-21	SWITCH, KEYBOARD (NAME EDIT/CHAR)
S624	1-762-875-21	SWITCH, KEYBOARD (►II CD)
S625	1-762-875-21	SWITCH, KEYBOARD (KARAOKE PON/MPX)
S626	1-762-875-21	SWITCH, KEYBOARD (CD NON STOP)
S627	1-762-875-21	SWITCH, KEYBOARD (■)
S628	1-762-875-21	SWITCH, KEYBOARD (► TAPE B)
S629	1-762-875-21	SWITCH, KEYBOARD (◄ TAPE B)
S630	1-762-875-21	SWITCH, KEYBOARD (P.FILE MEMORY)

DISPLAY **JOG** **LEAF SW** **MAIN**

Ref. No.	Part No.	Description	Remark
S631	1-762-875-21	SWITCH, KEYBOARD (MENU/NO)	
S632	1-762-875-21	SWITCH, KEYBOARD (- ◄◄)	
S633	1-762-875-21	SWITCH, KEYBOARD (TIMER SELECT)	
S634	1-762-875-21	SWITCH, KEYBOARD (CD FLASH)	
S635	1-762-875-21	SWITCH, KEYBOARD (CLEAR)	
S636	1-762-875-21	SWITCH, KEYBOARD (FUNCTION)	
S637	1-762-875-21	SWITCH, KEYBOARD (◄ TAPE A)	
S638	1-762-875-21	SWITCH, KEYBOARD (► TAPE A)	
S639	1-762-875-21	SWITCH, KEYBOARD (GEQ CONTROL)	
S640	1-762-875-21	SWITCH, KEYBOARD (FILE SELECT)	
S641	1-762-875-21	SWITCH, KEYBOARD (EFFECT)	
S642	1-762-875-21	SWITCH, KEYBOARD (EDIT/DIRECTION/TUNER MEMORY)	
S643	1-762-875-21	SWITCH, KEYBOARD (PLAY MODE/DOLBY NR/PTY)	
S644	1-762-875-21	SWITCH, KEYBOARD (REPEAT STEREO/MONO)	
S645	1-762-875-21	SWITCH, KEYBOARD (DEMO)	
S646	1-762-875-21	SWITCH, KEYBOARD (DISPLAY)	
S647	1-762-875-21	SWITCH, KEYBOARD (CLOCK/TIMER SET)	
S648	1-762-875-21	SWITCH, KEYBOARD (CD LOOP)	
		< VIBRATOR >	
X601	1-579-352-11	VIBRATOR, CERAMIC (12.5MHz)	

****

	1-673-379-11	JOG BOARD **********	
		< SWITCH >	
S601	1-473-534-11	ENCODER, ROTARY (JOG ⏮ ◄▬► ⏭)	

****

*	A-2007-732-A	LEAF SW BOARD, COMPLETE **********	
		< CAPACITOR >	
C1001	1-107-716-11	ELECT 33uF 20% 10V	
		< CONNECTOR >	
CN1001	1-568-860-11	SOCKET, CONNECTOR 17P	
CN1001	1-784-459-11	CONNECTOR, FFC/FPC 17P	
		< DIODE >	
D1001	8-719-911-19	DIODE 1SS119	
D1002	8-719-911-19	DIODE 1SS119	
		< HOLDER >	
* DM1001	1-784-581-11	HOLDER, CABLE (2.5MM PITCH) 4P	
		< IC >	
IC1001	8-749-014-38	IC PHOTO INTERRUPTER SG-264	
IC1002	8-749-014-38	IC PHOTO INTERRUPTER SG-264	
		< TRANSISTOR >	
Q1001	8-729-029-56	TRANSISTOR DTA144ESA	

Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R907	1-247-879-11	CARBON	100K	5%	1/4W
R1001	1-249-409-11	CARBON	220	5%	1/4W F
R1002	1-249-409-11	CARBON	220	5%	1/4W F
R1003	1-249-414-11	CARBON	560	5%	1/4W F
R1004	1-247-834-11	CARBON	1.3K	5%	1/4W
R1005	1-247-818-11	CARBON	300	5%	1/4W
R1006	1-247-864-11	CARBON	24K	5%	1/4W
R1007	1-247-856-00	CARBON	11K	5%	1/4W
R1008	1-249-417-11	CARBON	1K	5%	1/4W F
		< VARIABLE RESISTOR >			
RV1001	1-241-785-11	RES, ADJ, CARBON 10K			
RV1002	1-241-785-11	RES, ADJ, CARBON 10K			
		< SWITCH >			
S1001	1-570-953-11	SWITCH, PUSH (1 KEY)(A PLAY)			
S1002	1-570-953-11	SWITCH, PUSH (1 KEY)(B PLAY)			
S1003	1-771-333-11	SWITCH, LEAF (A HALF)			
S1004	1-771-205-11	SWITCH, LEAF (A $\overline{120}$/70)			
S1005	1-771-205-11	SWITCH, LEAF (REC A)			
S1006	1-771-333-11	SWITCH, LEAF (B HALF)			
S1008	1-771-205-11	SWITCH, LEAF (B $\overline{120}$/70)			
S1009	1-771-205-11	SWITCH, LEAF (REC B)			

****

	A-4405-868-A	MAIN BOARD, COMPLETE (AEP,UK,G,CIS) **********	
	A-4405-869-A	MAIN BOARD, COMPLETE (SP,MY,HK) **********	
	A-4405-871-A	MAIN BOARD, COMPLETE (E,AR) **********	
	A-4405-872-A	MAIN BOARD, COMPLETE (AUS) **********	
	A-4405-873-A	MAIN BOARD, COMPLETE (KR) **********	
	A-4405-875-A	MAIN BOARD, COMPLETE (US,CND) **********	
	7-685-872-09	SCREW +BVTT 3X8 (S)	
		< BATTERY >	
BT921	1-528-887-11	BATTERY, LITHIUM SECONDARY	
		< CAPACITOR >	
C101	1-162-286-31	CERAMIC 220PF 10% 50V	
C104	1-164-159-11	CERAMIC 0.1uF 50V (AEP,UK,G,CIS)	
C111	1-137-195-11	FILM 0.56uF 5% 50V	
C112	1-136-158-00	FILM 0.027uF 5% 50V	
C113	1-136-167-00	FILM 0.15uF 5% 50V	
C114	1-137-437-11	FILM 0.0056uF 5% 50V	
C115	1-136-159-00	FILM 0.033uF 5% 50V	
C116	1-137-365-11	FILM 0.0015uF 5% 50V	

Ref. No.	Part No.	Description			Remark
C117	1-136-153-00	FILM	0.01uF	5%	50V
C118	1-137-361-11	FILM	330PF	5%	50V
C119	1-137-368-11	FILM	0.0047uF	5%	50V
C120	1-137-367-11	FILM	0.0033uF	5%	50V
C121	1-126-964-11	ELECT	10uF	20%	50V
C122	1-162-288-31	CERAMIC	330PF	10%	50V
C123	1-136-169-00	FILM	0.22uF	5%	50V
C124	1-136-169-00	FILM	0.22uF	5%	50V
C125	1-126-964-11	ELECT	10uF	20%	50V
C131	1-104-664-11	ELECT	47uF	20%	16V
C132	1-104-664-11	ELECT	47uF	20%	16V
C135	1-126-964-11	ELECT	10uF	20%	50V
C136	1-161-494-00	CERAMIC	0.022uF		25V
C141	1-126-959-11	ELECT	0.47uF	20%	50V
C151	1-162-286-31	CERAMIC	220PF	10%	50V
C161	1-137-195-11	FILM	0.56uF	5%	50V
C162	1-136-158-00	FILM	0.027uF	5%	50V
C163	1-136-167-00	FILM	0.15uF	5%	50V
C164	1-137-437-11	FILM	0.0056uF	5%	50V
C165	1-136-159-00	FILM	0.033uF	5%	50V
C166	1-137-365-11	FILM	0.0015uF	5%	50V
C167	1-136-153-00	FILM	0.01uF	5%	50V
C168	1-137-361-11	FILM	330PF	5%	50V
C169	1-137-368-11	FILM	0.0047uF	5%	50V
C170	1-137-367-11	FILM	0.0033uF	5%	50V
C171	1-126-964-11	ELECT	10uF	20%	50V
C172	1-162-288-31	CERAMIC	330PF	10%	50V
C173	1-136-169-00	FILM	0.22uF	5%	50V
C174	1-136-169-00	FILM	0.22uF	5%	50V
C175	1-126-964-11	ELECT	10uF	20%	50V
C176	1-136-495-11	FILM	0.068uF	5%	50V
C177	1-136-153-00	FILM	0.01uF	5%	50V
C193	1-126-964-11	ELECT	10uF	20%	50V (EXCEPT AEP,UK,G,CIS)
C194	1-162-286-31	CERAMIC	220PF	10%	50V (EXCEPT AEP,UK,G,CIS)
C301	1-126-960-11	ELECT	1uF	20%	50V
C302	1-137-368-11	FILM	0.0047uF	5%	50V
C303	1-136-165-00	FILM	0.1uF	5%	50V
C304	1-136-165-00	FILM	0.1uF	5%	50V
C305	1-126-956-91	ELECT	0.1uF	20%	50V
C306	1-126-960-11	ELECT	1uF	20%	50V
C307	1-126-959-11	ELECT	0.47uF	20%	50V
C308	1-126-964-11	ELECT	10uF	20%	50V
C309	1-137-194-91	FILM	0.47uF	5%	50V
C310	1-162-290-31	CERAMIC	470PF	10%	50V
C311	1-126-964-11	ELECT	10uF	20%	50V
C312	1-126-959-11	ELECT	0.47uF	20%	50V
C313	1-162-294-31	CERAMIC	0.001uF	10%	50V
C314	1-126-964-11	ELECT	10uF	20%	50V
C315	1-126-963-11	ELECT	4.7uF	20%	50V
C316	1-104-665-11	ELECT	100uF	20%	10V
C317	1-104-665-11	ELECT	100uF	20%	10V
C320	1-162-290-31	CERAMIC	470PF	10%	50V
C331	1-164-159-11	CERAMIC	0.1uF		50V
C332	1-164-159-11	CERAMIC	0.1uF		50V
C333	1-162-600-11	CERAMIC	0.0047uF	30%	16V
C334	1-162-600-11	CERAMIC	0.0047uF	30%	16V
C351	1-126-960-11	ELECT	1uF	20%	50V
C352	1-137-368-11	FILM	0.0047uF	5%	50V
C353	1-136-165-00	FILM	0.1uF	5%	50V
C354	1-136-165-00	FILM	0.1uF	5%	50V
C355	1-126-959-11	ELECT	0.47uF	20%	50V
C356	1-126-960-11	ELECT	1uF	20%	50V
C357	1-126-959-11	ELECT	0.47uF	20%	50V
C358	1-126-964-11	ELECT	10uF	20%	50V
C359	1-137-194-91	FILM	0.47uF	5%	50V
C366	1-126-961-11	ELECT	2.2uF	20%	50V
C367	1-126-961-11	ELECT	2.2uF	20%	50V
C371	1-162-294-31	CERAMIC	0.001uF	10%	50V
C372	1-126-964-11	ELECT	10uF	20%	50V
C373	1-164-159-11	CERAMIC	0.1uF		50V
C374	1-126-960-11	ELECT	1uF	20%	50V
C375	1-162-294-31	CERAMIC	0.001uF	10%	50V
C376	1-126-961-11	ELECT	2.2uF	20%	50V
C377	1-126-961-11	ELECT	2.2uF	20%	50V
C378	1-126-916-11	ELECT	1000uF	20%	6.3V
C381	1-164-159-11	CERAMIC	0.1uF		50V
C382	1-104-665-11	ELECT	100uF	20%	10V
C383	1-164-159-11	CERAMIC	0.1uF		50V
C390	1-126-935-11	ELECT	470uF	20%	6.3V
C391	1-161-494-00	CERAMIC	0.022uF		25V
C392	1-126-916-11	ELECT	1000uF	20%	6.3V
C393	1-161-494-00	CERAMIC	0.022uF		25V
C394	1-126-925-11	ELECT	470uF	20%	10V
C395	1-162-290-31	CERAMIC	470PF	10%	50V
C396	1-126-961-11	ELECT	2.2uF	20%	50V
C397	1-126-961-11	ELECT	2.2uF	20%	50V
C401	1-136-495-11	FILM	0.068uF	5%	50V (AEP,UK,G,CIS)
C402	1-136-495-11	FILM	0.068uF	5%	50V (AEP,UK,G,CIS)
C403	1-164-159-11	CERAMIC	0.1uF		50V (AEP,UK,G,CIS)
C412	1-107-717-11	ELECT	47uF	20%	50V
C431	1-126-934-11	ELECT	220uF	20%	10V
C432	1-104-665-11	ELECT	100uF	20%	10V
C433	1-126-964-11	ELECT	10uF	20%	50V
C434	1-126-933-11	ELECT	100uF	20%	16V
C451	1-136-495-11	FILM	0.068uF	5%	50V (AEP,UK,G,CIS)
C452	1-136-495-11	FILM	0.068uF	5%	50V (AEP,UK,G,CIS)
C453	1-164-159-11	CERAMIC	0.1uF		50V (AEP,UK,G,CIS)
C501	1-104-664-11	ELECT	47uF	20%	10V
C502	1-164-159-11	CERAMIC	0.1uF		50V
C503	1-136-165-00	FILM	0.1uF	5%	50V
C504	1-126-926-11	ELECT	1000uF	20%	10V
C505	1-162-306-11	CERAMIC	0.01uF	20%	16V
C508	1-110-948-11	ELECT	1uF	20%	50V
C551	1-104-665-11	ELECT	100uF	20%	10V
C552	1-164-159-11	CERAMIC	0.1uF		50V
C553	1-102-959-91	CERAMIC	22PF	5%	50V
C554	1-102-959-91	CERAMIC	22PF	5%	50V

MAIN

Ref. No.	Part No.	Description			Remark
C556	1-136-165-00	FILM	0.1uF	5%	50V
C557	1-104-665-11	ELECT	100uF	20%	10V
C558	1-164-159-11	CERAMIC	0.1uF		50V
C559	1-104-665-11	ELECT	100uF	20%	10V
C801	1-126-163-11	ELECT	4.7uF	20%	50V
C802	1-162-294-31	CERAMIC	0.001uF	10%	50V
C803	1-162-282-31	CERAMIC	100PF	10%	50V
C804	1-126-052-11	ELECT	100uF	20%	10V
C806	1-164-159-11	CERAMIC	0.1uF		50V
C807	1-164-159-11	CERAMIC	0.1uF		50V
C808	1-164-159-11	CERAMIC	0.1uF		50V
C809	1-128-563-11	ELECT	100uF	20%	100V (E,SP,MY,HK,AR,KR,AUS)
C809	1-128-576-11	ELECT	100uF	20%	63V (US,CND,AEP,UK,G,CIS)
C810	1-128-562-11	ELECT	47uF	20%	100V
C811	1-162-306-11	CERAMIC	0.01uF	20%	16V (AEP,UK,G,CIS)
C812	1-162-306-11	CERAMIC	0.01uF	20%	16V (AEP,UK,G,CIS)
C813	1-126-967-11	ELECT	47uF	20%	50V
C841	1-126-974-11	ELECT	3300uF	20%	50V (E,SP,MY,HK,AR,KR,AUS)
C842	1-127-752-11	ELECT	3300uF	20%	63V (US,CND,AEP,UK,G,CIS)
C842	1-127-753-11	ELECT	3300uF	20%	71V (SP,MY,HK,KR,AUS)
C842	1-127-813-11	ELECT	3300uF	20%	71V (E,AR)
C843	1-136-165-00	FILM	0.1uF	5%	50V (E,SP,MY,HK,AR,KR,AUS)
C844	1-136-165-00	FILM	0.1uF	5%	50V
C851	1-126-163-11	ELECT	4.7uF	20%	50V
C852	1-162-294-31	CERAMIC	0.001uF	10%	50V
C853	1-162-282-31	CERAMIC	100PF	10%	50V
C854	1-126-052-11	ELECT	100uF	20%	10V
C856	1-164-159-11	CERAMIC	0.1uF		50V
C857	1-164-159-11	CERAMIC	0.1uF		50V
C858	1-164-159-11	CERAMIC	0.1uF		50V
C859	1-128-563-11	ELECT	100uF	20%	100V (E,SP,MY,HK,AR,KR,AUS)
C859	1-128-576-11	ELECT	100uF	20%	63V (US,CND,AEP,UK,G,CIS)
C891	1-126-974-11	ELECT	3300uF	20%	50V (E,SP,MY,HK,AR,KR,AUS)
C892	1-127-752-11	ELECT	3300uF	20%	63V (US,CND,AEP,UK,G,CIS)
C892	1-127-813-11	ELECT	3300uF	20%	71V (E,SP,MY,HK,AR,KR,AUS)
C893	1-136-165-00	FILM	0.1uF	5%	50V (E,SP,MY,HK,AR,KR,AUS)
C894	1-136-165-00	FILM	0.1uF	5%	50V
C901	1-136-165-00	FILM	0.1uF	5%	50V
C902	1-111-235-61	ELECT	10000uF	20%	25V
C903	1-104-666-11	ELECT	220uF	20%	25V
C904	1-104-664-11	ELECT	47uF	20%	16V
C905	1-104-661-91	ELECT	330uF	20%	16V
C906	1-136-165-00	FILM	0.1uF	5%	50V
C907	1-126-955-11	ELECT	4700uF	20%	35V
C908	1-126-934-11	ELECT	220uF	20%	10V
C909	1-126-960-11	ELECT	1uF	20%	50V
C910	1-104-665-11	ELECT	100uF	20%	10V
C911	1-126-960-11	ELECT	1uF	20%	50V
C912	1-126-767-11	ELECT	1000uF	20%	16V
C913	1-126-960-11	ELECT	1uF	20%	50V
C914	1-126-767-11	ELECT	1000uF	20%	16V
C915	1-104-664-11	ELECT	47uF	20%	16V
C916	1-164-159-11	CERAMIC	0.1uF		50V
C917	1-126-933-11	ELECT	100uF	20%	16V
C919	1-126-960-11	ELECT	1uF	20%	50V
C920	1-126-934-11	ELECT	220uF	20%	10V
C922	1-126-960-11	ELECT	1uF	20%	50V
C923	1-126-934-11	ELECT	220uF	20%	10V
C924	1-104-665-11	ELECT	100uF	20%	10V
C925	1-104-665-11	ELECT	100uF	20%	10V
C951	1-136-165-00	FILM	0.1uF	5%	50V
C952	1-126-943-11	ELECT	2200uF	20%	25V
C953	1-104-666-11	ELECT	220uF	20%	25V
C955	1-104-661-91	ELECT	330uF	20%	16V
C956	1-136-165-00	FILM	0.1uF	5%	50V
		< CONNECTOR >			
CN102	1-568-443-11	SOCKET, CONNECTOR 13P			(US,CND,E,AR,KR,AUS)
CN102	1-569-321-11	SOCKET, CONNECTOR 15P			(AEP,UK,G,CIS,SP,MY,HK)
* CN103	1-568-946-11	PIN, CONNECTOR 8P			
* CN104	1-568-947-11	PIN, CONNECTOR 9P			
CN105	1-569-308-11	SOCKET, CONNECTOR (L TYRE) 19P			
CN106	1-569-321-11	SOCKET, CONNECTOR 15P			
CN107	1-568-440-11	SOCKET, CONNECTOR 17P			
CN201	1-568-742-11	SOCKET, CONNECTOR 23P			
* CN301	1-568-449-11	HOUSING, CONNECTOR(PC BOARD)3P			
* CN302	1-568-449-11	HOUSING, CONNECTOR(PC BOARD)3P			
CN371	1-568-741-11	SOCKET, CONNECTOR 23P			
CN921	1-568-683-11	PIN, CONNECTOR (PC BAORD) 2P			
		< DIODE >			
D141	8-719-911-19	DIODE 1SS119-25			
D191	8-719-911-19	DIODE 1SS119-25			
D331	8-719-911-19	DIODE 1SS119-25			
D333	8-719-911-19	DIODE 1SS119-25			
D334	8-719-911-19	DIODE 1SS119-25			
D335	8-719-911-19	DIODE 1SS119-25			
D371	8-719-024-99	DIODE 11ES2-NTA2B			
D372	8-719-024-99	DIODE 11ES2-NTA2B			
D373	8-719-024-99	DIODE 11ES2-NTA2B			
D401	8-719-911-19	DIODE 1SS119-25			
D411	8-719-911-19	DIODE 1SS119-25			
D501	8-719-911-19	DIODE 1SS119-25			
D502	8-719-911-19	DIODE 1SS119-25			
D503	8-719-911-19	DIODE 1SS119-25			
D504	8-719-911-19	DIODE 1SS119-25			
D505	8-719-911-19	DIODE 1SS119-25			
D506	8-719-911-19	DIODE 1SS119-25			
D507	8-719-911-19	DIODE 1SS119-25			
D508	8-719-911-19	DIODE 1SS119-25			
D509	8-719-911-19	DIODE 1SS119-25			

Ref. No.	Part No.	Description	Remark
D510	8-719-911-19	DIODE 1SS119-25	
D551	8-719-911-19	DIODE 1SS119-25	
D552	8-719-911-19	DIODE 1SS119-25	
D801	8-719-911-19	DIODE 1SS119-25	
D802	8-719-947-60	DIODE MTZJ-T-72-15A (E,SP,MY,HK,AR,KR,AUS)	
D803	8-719-911-19	DIODE 1SS119-25	
D804	8-719-911-19	DIODE 1SS119-25	
D831	8-719-302-38	DIODE RBV-602-01	
D832	8-719-510-68	DIODE D5SBA20F01 (E,SP,MY,HK,AR,KR,AUS)	
D851	8-719-911-19	DIODE 1SS119-25	
D852	8-719-947-60	DIODE MTZJ-T-72-15A (E,SP,MY,HK,AR,KR,AUS)	
D901	8-719-024-99	DIODE 11ES2-NTA2B	
D902	8-719-024-99	DIODE 11ES2-NTA2B	
D903	8-719-024-99	DIODE 11ES2-NTA2B	
D904	8-719-024-99	DIODE 11ES2-NTA2B	
D905	8-719-933-36	DIODE HZS6B1L	
D906	8-719-911-19	DIODE 1SS119-25	
D907	8-719-024-99	DIODE 11ES2-NTA2B	
D908	8-719-024-99	DIODE 11ES2-NTA2B	
D909	8-719-024-99	DIODE 11ES2-NTA2B	
D910	8-719-024-99	DIODE 11ES2-NTA2B	
D911	8-719-024-99	DIODE 11ES2-NTA2B	
D915	8-719-935-69	DIODE HZS11B1LTA	
D917	8-719-911-19	DIODE 1SS119-25	
D918	8-719-024-99	DIODE 11ES2-NTA2B	
D919	8-719-024-99	DIODE 11ES2-NTA2B	
D920	8-719-024-99	DIODE 11ES2-NTA2B	
D921	8-719-024-99	DIODE 11ES2-NTA2B	
D5001	8-719-911-19	DIODE 1SS119-25	
		< FERRITE BEAD >	
FB381	1-412-473-21	INDUCTOR 0UH	
FB382	1-412-473-21	INDUCTOR 0UH	
		< IC >	
IC101	8-759-571-54	IC M62493FP	
IC301	8-759-495-26	IC HA12215	
IC371	8-759-481-02	IC M62016L	
IC381	8-759-916-12	IC SN74HC00AN	
IC382	8-749-921-11	IC GP1F32R	
IC501	8-759-583-18	IC M30620MC-A03FP	
IC502	8-759-635-63	IC M51943BSL	
IC801	8-749-015-36	IC STK411-230E (E,SP,MY,HK,AR,KR,AUS)	
IC801	8-749-015-43	IC STK407-050E (CND)	
IC801	8-749-015-44	IC STK407-070E (US)	
IC801	8-749-015-45	IC STK407-090E (AEP,UK,G,CIS)	
IC901	8-759-604-86	IC M5F7807L	
IC902	8-759-231-53	IC TA7805S	
IC903	8-759-604-39	IC M5F78M12 (US)	
IC903	8-759-701-79	IC NJM7812FA (EXCEPT US,E,AR)	
IC904	8-759-231-53	IC TA7805S	
IC905	8-759-231-53	IC TA7805S	
		< JACK >	
J102	1-770-772-11	JACK, PIN 2P (US,EXCEPT US,CND)	(VIDEO AUDIO IN)
J102	1-778-204-11	JACK, PIN 2P (CND)(VIDEO AUDIO IN)	
J191	1-774-785-11	JACK, PIN (EXCEPT AEP,UK,G,CIS)	(SUPER WOOFER)
		< COIL >	
L371	1-410-517-11	INDUCTOR 47uH	
L391	1-410-521-11	INDUCTOR 100uH	
L392	1-410-521-11	INDUCTOR 100uH	
L401	1-420-872-00	COIL, AIR-CORE (AEP,UK,G,CIS)	
L451	1-420-872-00	COIL, AIR-CORE (AEP,UK,G,CIS)	
L501	1-410-509-11	INDUCTOR 10uH	
		< TRANSISTOR >	
Q111	8-729-119-79	TRANSISTOR 2SC2785-FEK	
Q112	8-729-119-79	TRANSISTOR 2SC2785-FEK	
Q113	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q161	8-729-119-79	TRANSISTOR 2SC2785-FEK	
Q162	8-729-119-79	TRANSISTOR 2SC2785-FEK	
Q163	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q191	8-729-141-30	TRANSISTOR 2SC3623A-LK	(EXCEPT AEP,UK,G,CIS)
Q192	8-729-900-63	TRANSISTOR DTA124ES	
Q201	8-729-900-36	TRANSISTOR DTC124ES	
Q251	8-729-900-36	TRANSISTOR DTC124ES	
Q331	8-729-118-00	TRANSISTOR 2SB1116-L	
Q332	8-729-900-80	TRANSISTOR DTC114ES	
Q333	8-729-118-00	TRANSISTOR 2SB1116-L	
Q334	8-729-900-80	TRANSISTOR DTC114ES	
Q335	8-729-900-80	TRANSISTOR DTC114ES	
Q336	8-729-118-00	TRANSISTOR 2SB1116-L	
Q337	8-729-045-21	TRANSISTOR 2SD1513TP-LK	
Q338	8-729-422-57	TRANSISTOR UN4111	
Q339	8-729-900-80	TRANSISTOR DTC114ES	
Q340	8-729-118-00	TRANSISTOR 2SB1116-L	
Q341	8-729-045-21	TRANSISTOR 2SD1513TP-LK	
Q342	8-729-422-57	TRANSISTOR UN4111	
Q343	8-729-900-80	TRANSISTOR DTC114ES	
Q411	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q412	8-729-900-63	TRANSISTOR DTA124ES	
Q413	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q431	8-729-119-79	TRANSISTOR 2SC2785-FEK	
Q432	8-729-119-77	TRANSISTOR 2SA1175-FEK	
Q433	8-729-119-79	TRANSISTOR 2SC2785-FEK	
Q434	8-729-119-79	TRANSISTOR 2SC2785-FEK	
Q435	8-729-900-36	TRANSISTOR DTC124ES	
Q436	8-729-119-77	TRANSISTOR 2SA1175-FEK	
Q437	8-729-119-79	TRANSISTOR 2SC2785-FEK	
Q439	8-729-119-79	TRANSISTOR 2SC2785-FEK	
Q501	8-729-119-79	TRANSISTOR 2SC2785-FEK	
Q508	8-729-900-63	TRANSISTOR DTA124ES	
Q509	8-729-900-63	TRANSISTOR DTA124ES	
Q801	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA	
Q803	8-729-140-82	TRANSISTOR 2SA988-PAFAEA	
Q804	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA	
Q805	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA	
Q831	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA	
Q832	8-729-119-79	TRANSISTOR 2SC2785-FEK	
Q851	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA	

MAIN

Ref. No.	Part No.	Description				Remark
Q901	8-729-209-15	TRANSISTOR	2SD2012			
Q902	8-729-119-79	TRANSISTOR	2SC2785-FEK			
Q903	8-729-900-36	TRANSISTOR	DTC124ES			
Q904	8-729-900-36	TRANSISTOR	DTC124ES			
Q905	8-729-040-20	TRANSISTOR	RT1P137L-TP			
Q906	8-729-900-36	TRANSISTOR	DTC124ES			
Q907	8-729-040-20	TRANSISTOR	RT1P137L-TP			
Q908	8-729-900-36	TRANSISTOR	DTC124ES			
Q909	8-729-026-68	TRANSISTOR	2SD2525(TP)			
Q913	8-729-119-79	TRANSISTOR	2SC2785-FEK			
Q914	8-729-119-77	TRANSISTOR	2SA1175-FEK			
Q921	8-729-620-05	TRANSISTOR	2SC2603-EF			
Q951	8-729-141-83	TRANSISTOR	2SB1094-LK			
Q952	8-729-119-77	TRANSISTOR	2SA1175-FEK			
		< RESISTOR >				
R101	1-249-417-11	CARBON	1K	5%	1/4W	F
R102	1-249-441-11	CARBON	100K	5%	1/4W	
R111	1-249-429-11	CARBON	10K	5%	1/4W	
R113	1-247-894-11	CARBON	430K	5%	1/4W	
R114	1-249-415-11	CARBON	680K	5%	1/4W	F
R115	1-249-433-11	CARBON	22K	5%	1/4W	
R116	1-247-887-00	CARBON	220K	5%	1/4W	
R117	1-249-429-11	CARBON	10K	5%	1/4W	
R118	1-249-437-11	CARBON	47K	5%	1/4W	
R119	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R120	1-249-441-11	CARBON	100K	5%	1/4W	
R121	1-249-429-11	CARBON	10K	5%	1/4W	
R124	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R125	1-247-843-11	CARBON	3.3K	5%	1/4W	
R126	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R127	1-247-903-00	CARBON	1M	5%	1/4W	
R130	1-249-433-11	CARBON	22K	5%	1/4W	
R131	1-247-807-31	CARBON	100	5%	1/4W	
R132	1-247-807-31	CARBON	100	5%	1/4W	
R133	1-247-807-31	CARBON	100	5%	1/4W	
R141	1-249-433-11	CARBON	22K	5%	1/4W	
R142	1-249-433-11	CARBON	22K	5%	1/4W	
R143	1-249-417-11	CARBON	1K	5%	1/4W	F
R144	1-249-441-11	CARBON	100K	5%	1/4W	
R145	1-247-903-00	CARBON	1M	5%	1/4W	
R151	1-249-417-11	CARBON	1K	5%	1/4W	F
R152	1-249-441-11	CARBON	100K	5%	1/4W	
R161	1-249-429-11	CARBON	10K	5%	1/4W	
R163	1-247-894-11	CARBON	430K	5%	1/4W	
R164	1-249-415-11	CARBON	680	5%	1/4W	F
R165	1-249-433-11	CARBON	22K	5%	1/4W	
R166	1-247-887-00	CARBON	220K	5%	1/4W	
R167	1-249-429-11	CARBON	10K	5%	1/4W	
R168	1-249-437-11	CARBON	47K	5%	1/4W	
R169	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R170	1-249-441-11	CARBON	100K	5%	1/4W	
R171	1-249-429-11	CARBON	10K	5%	1/4W	
R176	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R177	1-247-903-00	CARBON	1M	5%	1/4W	
R190	1-249-441-11	CARBON	100K	5%	1/4W	

Ref. No.	Part No.	Description				Remark
R196	1-249-417-11	CARBON	1K	5%	1/4W	F
		(EXCEPT AEP,UK,G,CIS)				
R197	1-249-441-11	CARBON	100K	5%	1/4W	
		(EXCEPT AEP,UK,G,CIS)				
R198	1-249-417-11	CARBON	1K	5%	1/4W	F
		(EXCEPT AEP,UK,G,CIS)				
R199	1-249-429-11	CARBON	10K	5%	1/4W	
		(EXCEPT AEP,UK,G,CIS)				
R201	1-247-888-11	CARBON	240K	5%	1/4W	
R251	1-247-888-11	CARBON	240K	5%	1/4W	
R301	1-249-435-11	CARBON	33K	5%	1/4W	
R302	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R303	1-247-807-31	CARBON	100	5%	1/4W	
R304	1-247-807-31	CARBON	100	5%	1/4W	
R305	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R306	1-249-428-11	CARBON	8.2K	5%	1/4W	F
R307	1-249-428-11	CARBON	8.2K	5%	1/4W	F
R308	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R309	1-249-433-11	CARBON	22K	5%	1/4W	
R311	1-247-903-00	CARBON	1M	5%	1/4W	
R312	1-247-884-11	CARBON	160K	5%	1/4W	
R313	1-249-441-11	CARBON	100K	5%	1/4W	
R315	1-249-429-11	CARBON	10K	5%	1/4W	
R316	1-249-432-11	CARBON	18K	5%	1/4W	
R317	1-249-429-11	CARBON	10K	5%	1/4W	
R318	1-249-429-11	CARBON	10K	5%	1/4W	
R319	1-247-893-11	CARBON	390K	5%	1/4W	
R321	1-249-422-11	CARBON	2.7K	5%	1/4W	F
R322	1-249-428-11	CARBON	8.2K	5%	1/4W	F
R324	1-247-876-11	CARBON	75K	5%	1/4W	
R325	1-247-876-11	CARBON	75K	5%	1/4W	
R326	1-249-437-11	CARBON	47K	5%	1/4W	
R327	1-249-437-11	CARBON	47K	5%	1/4W	
R328	1-249-437-11	CARBON	47K	5%	1/4W	
R329	1-249-417-11	CARBON	1K	5%	1/4W	F
R330	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R331	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R332	1-249-415-11	CARBON	680	5%	1/4W	F
R333	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R334	1-249-415-11	CARBON	680	5%	1/4W	F
R335	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R336	1-249-437-11	CARBON	47K	5%	1/4W	
R337	1-249-417-11	CARBON	1K	5%	1/4W	F
R338	1-249-411-11	CARBON	330	5%	1/4W	
R339	1-249-437-11	CARBON	47K	5%	1/4W	
R340	1-249-437-11	CARBON	47K	5%	1/4W	
R341	1-249-411-11	CARBON	330	5%	1/4W	
R342	1-249-437-11	CARBON	47K	5%	1/4W	
R343	1-249-417-11	CARBON	1K	5%	1/4W	F
R351	1-249-435-11	CARBON	33K	5%	1/4W	
R352	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R353	1-247-807-31	CARBON	100	5%	1/4W	
R354	1-247-807-31	CARBON	100	5%	1/4W	
R355	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R356	1-249-428-11	CARBON	8.2K	5%	1/4W	F
R357	1-249-428-11	CARBON	8.2K	5%	1/4W	F
R358	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R359	1-249-435-11	CARBON	33K	5%	1/4W	

Ref. No.	Part No.	Description			Remark
R367	1-249-441-11	CARBON	100K	5%	1/4W
R375	1-249-433-11	CARBON	22K	5%	1/4W
R376	1-249-429-11	CARBON	10K	5%	1/4W
R377	1-249-441-11	CARBON	100K	5%	1/4W
R381	1-249-413-11	CARBON	470	5%	1/4W F
R382	1-249-413-11	CARBON	470	5%	1/4W F
R383	1-249-413-11	CARBON	470	5%	1/4W F
R384	1-247-807-31	CARBON	100	5%	1/4W
R391	1-247-807-31	CARBON	100	5%	1/4W
R392	1-247-807-31	CARBON	100	5%	1/4W
R393	1-249-435-11	CARBON	33K	5%	1/4W
R394	1-249-435-11	CARBON	33K	5%	1/4W
R401	1-260-076-11	CARBON	10	5%	1/2W (AEP,UK,G,CIS)
R402	1-260-076-11	CARBON	10	5%	1/2W (AEP,UK,G,CIS)
⚠R411	1-215-892-11	METAL OXIDE	1K	5%	2W F (US)
⚠R411	1-215-893-11	METAL OXIDE	1.5K	5%	2W F (E,SP,MY,HK,AR,KR,AUS)
⚠R411	1-216-456-00	METAL OXIDE	820	5%	2W F (CND)
⚠R411	1-216-457-00	METAL OXIDE	1.2K	5%	2W F (AEP,UK,G,CIS)
R412	1-249-417-11	CARBON	1K	5%	1/4W F
R413	1-249-417-11	CARBON	1K	5%	1/4W F
R414	1-249-417-11	CARBON	1K	5%	1/4W F
R415	1-249-429-11	CARBON	10K	5%	1/4W
R416	1-249-437-11	CARBON	47K	5%	1/4W
R417	1-249-402-11	CARBON	56	5%	1/4W F
R418	1-249-402-11	CARBON	56	5%	1/4W F
R421	1-260-090-11	CARBON	180	5%	1/2W (E,SP,MY,HK,AR,KR,AUS)
R421	1-260-091-11	CARBON	220	5%	1/2W (US,CND,AEP,UK,G,CIS)
R422	1-260-090-11	CARBON	180	5%	1/2W (E,SP,MY,HK,AR,KR,AUS)
R422	1-260-091-11	CARBON	220	5%	1/2W (US,CND,AEP,UK,G,CIS)
R423	1-260-090-11	CARBON	180	5%	1/2W (E,SP,MY,HK,AR,KR,AUS)
R423	1-260-091-11	CARBON	220	5%	1/2W (US,CND,AEP,UK,G,CIS)
R424	1-260-090-11	CARBON	180	5%	1/2W (E,SP,MY,HK,AR,KR,AUS)
R431	1-249-438-11	CARBON	56K	5%	1/4W
R432	1-249-437-11	CARBON	47K	5%	1/4W
R434	1-247-903-00	CARBON	1M	5%	1/4W
R435	1-249-425-11	CARBON	4.7K	5%	1/4W F
R437	1-249-429-11	CARBON	10K	5%	1/4W
R438	1-249-429-11	CARBON	10K	5%	1/4W
R439	1-249-425-11	CARBON	4.7K	5%	1/4W F
R440	1-249-433-11	CARBON	22K	5%	1/4W
R441	1-249-435-11	CARBON	33K	5%	1/4W
R443	1-249-417-11	CARBON	1K	5%	1/4W F
R451	1-260-076-11	CARBON	10	5%	1/2W (AEP,UK,G,CIS)
R452	1-260-076-11	CARBON	10	5%	1/2W (AEP,UK,G,CIS)

Ref. No.	Part No.	Description			Remark
R471	1-260-090-11	CARBON	180	5%	1/2W (E,SP,MY,HK,AR,KR,AUS)
R471	1-260-091-11	CARBON	220	5%	1/2W (US,CND,AEP,UK,G,CIS)
R472	1-260-090-11	CARBON	180	5%	1/2W (E,SP,MY,HK,AR,KR,AUS)
R472	1-260-091-11	CARBON	220	5%	1/2W (US,CND,AEP,UK,G,CIS)
R473	1-260-090-11	CARBON	180	5%	1/2W (E,SP,MY,HK,AR,KR,AUS)
R473	1-260-091-11	CARBON	220	5%	1/2W (US,CND,AEP,UK,G,CIS)
R474	1-260-090-11	CARBON	180	5%	1/2W (E,SP,MY,HK,AR,KR,AUS)
R501	1-249-413-11	CARBON	470	5%	1/4W F
R502	1-249-425-11	CARBON	4.7K	5%	1/4W F
R503	1-249-437-11	CARBON	47K	5%	1/4W
R504	1-249-437-11	CARBON	47K	5%	1/4W
R505	1-249-429-11	CARBON	10K	5%	1/4W
R508	1-249-421-11	CARBON	2.2K	5%	1/4W F
R509	1-249-441-11	CARBON	100K	5%	1/4W
R510	1-247-807-31	CARBON	100	5%	1/4W
R527	1-249-429-11	CARBON	10K	5%	1/4W
R533	1-249-411-11	CARBON	330	5%	1/4W (KR,AUS)
R536	1-249-429-11	CARBON	10K	5%	1/4W
R543	1-247-807-31	CARBON	100	5%	1/4W
R544	1-247-807-31	CARBON	100	5%	1/4W
R545	1-247-807-31	CARBON	100	5%	1/4W
R546	1-247-807-31	CARBON	100	5%	1/4W
R547	1-247-807-31	CARBON	100	5%	1/4W
R548	1-247-807-31	CARBON	100	5%	1/4W
R549	1-247-807-31	CARBON	100	5%	1/4W
R550	1-247-807-31	CARBON	100	5%	1/4W
R551	1-249-425-11	CARBON	4.7K	5%	1/4W
R552	1-249-425-11	CARBON	4.7K	5%	1/4W
R553	1-249-415-11	CARBON	680	5%	1/4W F (AEP,UK,G,CIS)
R553	1-249-421-11	CARBON	2.2K	5%	1/4W (E,AR)
R554	1-249-425-11	CARBON	4.7K	5%	1/4W (AEP,UK,G,CIS,E,AR,KR,AUS)
R555	1-247-807-31	CARBON	100	5%	1/4W
R556	1-247-807-31	CARBON	100	5%	1/4W
R557	1-247-807-31	CARBON	100	5%	1/4W
R558	1-247-807-31	CARBON	100	5%	1/4W
R559	1-247-807-31	CARBON	100	5%	1/4W (AEP,UK,G,CIS)
R560	1-247-807-31	CARBON	100	5%	1/4W (AEP,UK,G,CIS)
R561	1-247-807-31	CARBON	100	5%	1/4W
R562	1-247-807-31	CARBON	100	5%	1/4W
R563	1-247-807-31	CARBON	100	5%	1/4W
R564	1-247-807-31	CARBON	100	5%	1/4W
R565	1-249-413-11	CARBON	470	5%	1/4W F
R566	1-247-807-31	CARBON	100	5%	1/4W
R567	1-249-417-11	CARBON	1K	5%	1/4W F
R568	1-249-425-11	CARBON	4.7K	5%	1/4W F

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

MAIN

Ref. No.	Part No.	Description			Remark
R569	1-247-807-31	CARBON	100	5%	1/4W
R570	1-247-807-31	CARBON	100	5%	1/4W
R571	1-247-807-31	CARBON	100	5%	1/4W
R572	1-247-807-31	CARBON	100	5%	1/4W
R573	1-247-807-31	CARBON	100	5%	1/4W
R574	1-247-843-11	CARBON	3.3K	5%	1/4W
R575	1-249-429-11	CARBON	10K	5%	1/4W
R576	1-247-807-31	CARBON	100	5%	1/4W
R577	1-247-807-31	CARBON	100	5%	1/4W
R578	1-247-807-31	CARBON	100	5%	1/4W
R579	1-247-807-31	CARBON	100	5%	1/4W
R580	1-247-807-31	CARBON	100	5%	1/4W
R581	1-247-807-31	CARBON	100	5%	1/4W
R582	1-247-807-31	CARBON	100	5%	1/4W
R583	1-249-409-11	CARBON	220	5%	1/4W F
R584	1-247-807-31	CARBON	100	5%	1/4W
R585	1-247-807-31	CARBON	100	5%	1/4W
R586	1-247-807-31	CARBON	100	5%	1/4W
R587	1-247-807-31	CARBON	100	5%	1/4W
R588	1-247-807-31	CARBON	100	5%	1/4W
R589	1-247-807-31	CARBON	100	5%	1/4W
R590	1-247-807-31	CARBON	100	5%	1/4W
R591	1-247-807-31	CARBON	100	5%	1/4W
R592	1-249-429-11	CARBON	10K	5%	1/4W
R593	1-247-807-31	CARBON	100	5%	1/4W
R594	1-249-429-11	CARBON	10K	5%	1/4W
R595	1-247-807-31	CARBON	100	5%	1/4W
R596	1-249-429-11	CARBON	10K	5%	1/4W
R597	1-247-807-31	CARBON	100	5%	1/4W
R598	1-249-429-11	CARBON	10K	5%	1/4W
R599	1-249-429-11	CARBON	10K	5%	1/4W
R801	1-249-417-11	CARBON	1K	5%	1/4W F
R802	1-249-438-11	CARBON	56K	5%	1/4W
R803	1-249-413-11	CARBON	470	5%	1/4W F (E,SP,MY,HK,AR,KR,AUS)
R803	1-249-414-11	CARBON	560	5%	1/4W F (AEP,UK,G,CIS)
R803	1-249-415-11	CARBON	680	5%	1/4W F (US,CND)
R804	1-249-438-11	CARBON	56K	5%	1/4W
R805	1-249-417-11	CARBON	1K	5%	1/4W F
R806	1-249-431-11	CARBON	15K	5%	1/4W
R807	1-249-441-11	CARBON	100K	5%	1/4W
⚠R808	1-217-156-00	REGISTER	0.22	10%	5W F (E,SP,MY,HK,AR,KR,AUS)
⚠R808	1-220-755-11	METAL	0.22	10%	2W (US,CND,AEP,UK,G,CIS)
R809	1-260-076-11	CARBON	10	5%	1/2W
R810	1-260-105-11	CARBON	3.3K	5%	1/2W (SP,MY,HK,KR,AUS)
⚠R811	1-212-881-11	FUSIBLE	100	5%	1/4W F
⚠R812	1-217-637-00	FUSIBLE	1	5%	1/4W F (AEP,UK,G,CIS)
R813	1-249-433-11	CARBON	22K	5%	1/4W
R814	1-249-421-11	CARBON	2.2K	5%	1/4W F
R815	1-249-433-11	CARBON	22K	5%	1/4W
R816	1-249-429-11	CARBON	10K	5%	1/4W
R817	1-249-441-11	CARBON	100K	5%	1/4W
R818	1-249-435-11	CARBON	33K	5%	1/4W
R819	1-249-439-11	CARBON	68K	5%	1/4W
R821	1-249-435-11	CARBON	33K	5%	1/4W
R822	1-249-435-11	CARBON	33K	5%	1/4W
R831	1-249-441-11	CARBON	100K	5%	1/4W
R832	1-249-441-11	CARBON	100K	5%	1/4W
R833	1-249-441-11	CARBON	100K	5%	1/4W
R851	1-249-417-11	CARBON	1K	5%	1/4W F
R852	1-249-438-11	CARBON	56K	5%	1/4W
R853	1-249-413-11	CARBON	470	5%	1/4W F (E,SP,MY,HK,AR,KR,AUS)
R853	1-249-414-11	CARBON	560	5%	1/4W F (AEP,UK,G,CIS)
R853	1-249-415-11	CARBON	680	5%	1/4W F (US,CND)
R854	1-249-438-11	CARBON	56K	5%	1/4W
R855	1-249-417-11	CARBON	1K	5%	1/4W F
R856	1-249-431-11	CARBON	15K	5%	1/4W
R857	1-249-441-11	CARBON	100K	5%	1/4W
⚠R858	1-217-156-00	REGISTER	0.22	10%	5W F (E,SP,MY,HK,AR,KR,AUS)
⚠R858	1-220-755-11	METAL	0.22	10%	2W (US,CND,AEP,UK,G,CIS)
R859	1-260-076-11	CARBON	10	5%	1/2W
R860	1-260-105-11	CARBON	3.3K	5%	1/2W (SP,MY,HK,KR,AUS)
⚠R861	1-212-881-11	FUSIBLE	100	5%	1/4W F
R901	1-247-843-11	CARBON	3.3K	5%	1/4W
R902	1-249-415-11	CARBON	680	5%	1/4W F
R903	1-249-419-11	CARBON	1.5K	5%	1/4W F
R904	1-249-414-11	CARBON	560	5%	1/4W F
R905	1-249-425-11	CARBON	4.7K	5%	1/4W F
R906	1-247-843-11	CARBON	3.3K	5%	1/4W
R907	1-249-415-11	CARBON	680	5%	1/4W F
R908	1-249-429-11	CARBON	10K	5%	1/4W
R909	1-249-430-11	CARBON	12K	5%	1/4W
R910	1-249-429-11	CARBON	10K	5%	1/4W
R911	1-249-409-11	CARBON	220	5%	1/4W F
R918	1-249-421-11	CARBON	2.2K	5%	1/4W F
R919	1-249-409-11	CARBON	220	5%	1/4W F
R920	1-249-383-11	CARBON	1.5	5%	1/6W F
R921	1-249-383-11	CARBON	1.5	5%	1/6W F
R923	1-249-413-11	CARBON	470	5%	1/4W F
R924	1-249-425-11	CARBON	4.7K	5%	1/4W F
R925	1-249-408-11	CARBON	180	5%	1/4W
		< VARIABLE RESISTOR >			
RV301	1-238-600-11	RES, ADJ, CARBON 10K			
RV351	1-238-600-11	RES, ADJ, CARBON 10K			
		< RELAY >			
RY401	1-515-920-11	RELAY (24V)			
		< THERMISTOR >			
TH831	1-807-796-11	THERMISTOR			

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remark
		< TERMINAL >			
TM401	1-537-240-31	TERMINAL BOARD (CHECKER PIN)(SPEAKER)			
		< VIBRATOR >			
X551	1-567-098-41	VIBRATOR, CRYSTAL (32.768MHz)			
X613	1-579-930-12	VIBRATOR, CERAMIC (16MHz)			
**********					
	A-4419-305-A	MD DIGITAL BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C171	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C201	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C202	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C203	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C204	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C216	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C341	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C342	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C343	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C350	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C351	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C352	1-126-204-11	ELECT CHIP	47uF	20%	16V
C353	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C355	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C357	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C358	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C359	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C360	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C362	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C363	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C503	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C509	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C510	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C522	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C527	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C528	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C529	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C2001	1-163-038-91	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CN101	1-770-072-11	CONNECTOR,(LIF(NON-ZIF))FFC23P			
CN102	1-784-687-41	PIN, CONNECTOR (PC BOARD) 7P			
CN103	1-784-834-21	CONNECTOR,FFC(LIF(NON-ZIF))23P			
CN104	1-784-833-21	CONNECTOR,FFC(LIF(NON-ZIF))21P			
CN105	1-784-863-21	CONNECTOR,FFC(LIF(NON-ZIF))11P			
		< IC >			
IC153	8-759-481-19	IC LB1830M-S-TE-L			
IC201	8-759-553-65	IC UDA1341TS			
IC202	8-759-564-53	IC MC74HCU04ADTR2			
IC316	8-759-585-60	IC M30624MG-A01FP			
IC2000	8-759-195-81	IC TC7S86FU			

Ref. No.	Part No.	Description			Remark
		< COIL >			
L181	1-424-675-11	INDUCTOR	33uH		
L201	1-500-445-21	FERRITE	0uH		
L202	1-500-445-21	FERRITE	0uH		
		< TRANSISTOR >			
Q350	8-729-028-99	TRANSISTOR RT1N144M-TP-1			
		< RESISTOR >			
R201	1-216-121-91	RES,CHIP	1M	5%	1/10W
R202	1-216-041-00	METAL CHIP	470	5%	1/10W
R203	1-216-049-91	RES,CHIP	1K	5%	1/10W
R204	1-216-089-91	RES,CHIP	47K	5%	1/10W
R205	1-216-113-00	METAL CHIP	470K	5%	1/10W
R206	1-216-073-00	METAL CHIP	10K	5%	1/10W
R207	1-216-025-91	RES,CHIP	100	5%	1/10W
R330	1-216-073-00	METAL CHIP	10K	5%	1/10W
R331	1-216-097-91	RES,CHIP	100K	5%	1/10W
R333	1-216-073-00	METAL CHIP	10K	5%	1/10W
R349	1-216-073-00	METAL CHIP	10K	5%	1/10W
R351	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R352	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R353	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R358	1-216-073-00	METAL CHIP	10K	5%	1/10W
R361	1-216-073-00	METAL CHIP	10K	5%	1/10W
R363	1-216-073-00	METAL CHIP	10K	5%	1/10W
R366	1-216-097-91	RES,CHIP	100K	5%	1/10W
R367	1-216-097-91	RES,CHIP	100K	5%	1/10W
R383	1-216-073-00	METAL CHIP	10K	5%	1/10W
R384	1-216-073-00	METAL CHIP	10K	5%	1/10W
R385	1-216-073-00	METAL CHIP	10K	5%	1/10W
R386	1-216-073-00	METAL CHIP	10K	5%	1/10W
R391	1-216-073-00	METAL CHIP	10K	5%	1/10W
R395	1-216-073-00	METAL CHIP	10K	5%	1/10W
R400	1-216-073-00	METAL CHIP	10K	5%	1/10W
R816	1-216-216-00	RES,CHIP	5.6K	5%	1/8W
R817	1-216-216-00	RES,CHIP	5.6K	5%	1/8W
R818	1-216-174-00	RES,CHIP	100	5%	1/8W
R819	1-216-174-00	RES,CHIP	100	5%	1/8W
R2002	1-216-073-00	METAL CHIP	10K	5%	1/10W
R2004	1-216-025-91	RES,CHIP	100	5%	1/10W
R2005	1-216-025-91	RES,CHIP	100	5%	1/10W
R2006	1-216-025-91	RES,CHIP	100	5%	1/10W
R2007	1-216-025-91	RES,CHIP	100	5%	1/10W
		< VIBRATOR >			
X201	1-767-286-11	VIBRATOR, CRYSTAL (22MHz)			
X302	1-781-155-21	VIBRATOR, CERAMIC (10MHz)			
**********					

MD LINK | MD LINK SW | MOTOR (SLIDE) | MOTOR (TURN)

Ref. No.	Part No.	Description			Remark
	A-4419-326-A	MD LINK BOARD, COMPLETE (AEP,UK,G,CIS)			
		**********			
	A-4419-499-A	MD LINK BOARD, COMPLETE			
		**********			
					(EXCEPT AEP,UK,G,CIS)
		< CAPACITOR >			
C201	1-164-159-11	CERAMIC	0.1uF		50V
C202	1-124-635-00	ELECT	220uF	20%	6.3V
C204	1-162-600-11	CERAMIC	0.0047uF	30%	16V
C205	1-162-282-31	CERAMIC	100PF	5%	50V
C206	1-162-283-31	CERAMIC	150PF	10%	50V
C251	1-164-159-11	CERAMIC	0.1uF		50V
C420	1-162-294-31	CERAMIC	0.001uF	10%	50V
C421	1-126-157-11	ELECT	10uF	20%	16V
C470	1-162-294-31	CERAMIC	0.001uF	10%	50V
C471	1-126-157-11	ELECT	10uF	20%	16V
		< CONNECTOR >			
CN201	1-793-097-11	SOCKET, CONNECTOR 11P			
CN202	1-506-483-21	PIN, CONNECTOR 4P			
CN401	1-790-428-11	JACK			
		< EARTH TERMINAL >			
* E201	1-537-738-21	TERMINAL, EARTH			
		< IC >			
IC403	8-749-015-19	IC PHOTO COUPLER ON3131-SA.S0			
IC405	8-719-802-25	IC PHOTO TRANSISTOR TLP550-O			
		< TRANSISTOR >			
Q201	8-729-900-80	TRANSISTOR DTC114ES			
Q202	8-729-141-30	TRANSISTOR 2SC3623A-LK			
Q204	8-729-119-78	TRANSISTOR 2SC403SP-51			
Q205	8-729-900-80	TRANSISTOR DTC114ES			
		< RESISTOR >			
R201	1-249-395-11	CARBON	15	5%	1/4W F
R202	1-247-807-31	CARBON	100	5%	1/4W
R203	1-247-807-31	CARBON	100	5%	1/4W
R204	1-249-411-11	CARBON	330	5%	1/4W
R205	1-249-431-11	CARBON	15K	5%	1/4W
R206	1-249-431-11	CARBON	15K	5%	1/4W
R207	1-249-417-11	CARBON	1K	5%	1/4W F
R208	1-249-426-11	CARBON	5.6K	5%	1/4W
R209	1-249-408-11	CARBON	180	5%	1/4W F
R230	1-249-429-11	CARBON	10K	5%	1/4W
R231	1-249-429-11	CARBON	10K	5%	1/4W
R232	1-249-441-11	CARBON	100K	5%	1/4W
R234	1-249-417-11	CARBON	1K	5%	1/4W F
R251	1-249-395-11	CARBON	15	5%	1/4W F
R252	1-247-807-31	CARBON	100	5%	1/4W

****

Ref. No.	Part No.	Description			Remark
	1-673-382-11	MD LINK SW BOARD			
		**********			
		< DIODE >			
D753	8-719-063-93	DIODE SLR325VC-N-T32 (MD WALKMAN SYNC)			
		< RESISTOR >			
R750	1-249-407-11	CARBON	150	5%	1/4W F
R762	1-249-427-11	CARBON	6.8K	5%	1/4W F
		< SWITCH >			
S762	1-762-875-21	SWITCH, KEYBOARD (MD WALKMAN SYNC)			

****

*	1-658-578-11	MOTOR (SLIDE) BOARD			
		**********			
		< CAPACITOR >			
C801	1-162-306-11	CERAMIC	0.01uF	20%	16V
C804	1-162-306-11	CERAMIC	0.01uF	20%	16V
C805	1-126-964-11	ELECT	10uF	20%	50V
		< CONNECTOR >			
* CN801	1-568-947-11	PIN, CONNECTOR 9P			
		< DIODE >			
D801	8-719-921-48	DIODE MTZJ-T-72-5.6C			
D804	8-719-911-19	DIODE 1SS119			
D805	8-719-911-19	DIODE 1SS119			
		< IC >			
IC801	8-759-274-09	IC BA6286N			
		< RESISTOR >			
R801	1-249-401-11	CARBON	47	5%	1/4W F
		< SWITCH >			
S801	1-762-527-11	SWITCH, ROTARY (OPEN/CLOSE)			

****

*	1-658-577-11	MOTOR (TURN) BOARD			
		**********			
		< CAPACITOR >			
C701	1-162-306-11	CERAMIC	0.01uF	20%	16V
C702	1-126-964-11	ELECT	10uF	20%	50V
C705	1-162-306-11	CERAMIC	0.01uF	20%	16V
		< CONNECTOR >			
CN703	1-750-413-11	CONNECTOR, FFC/FPC 8P			
CN704	1-506-469-11	PIN, CONNECTOR 4P			
		< DIODE >			
D701	8-719-983-66	DIODE MTZJ-T-72-3.6B			

Ref. No.	Part No.	Description			Remark
		< IC >			
IC701	8-759-633-65	IC M54641L			
		< RESISTOR >			
R706	1-249-411-11	CARBON	330	5%	1/4W
R707	1-249-401-11	CARBON	47	5%	1/4W F

****

	1-673-381-11	POWER SW BOARD			
		**********			
		< DIODE >			
D751	8-719-063-93	DIODE SLR325VC-N-T32 (I/⏻)			
		< RESISTOR >			
R763	1-249-414-11	CARBON	560	5%	1/4W F

****

	1-673-377-11	SECONDARY BOARD			
		**********			
		< CONNECTOR >			
CN881	1-564-525-11	PLUG (MICRO CONNECTOR) 10P			(US,CND,AEP,UK,G,CIS)
* CN881	1-564-527-11	PLUG (MICRO CONNECTOR) 12P			(E,SP,MY,HK,AR,KR,AUS)
		< FUSE >			
⚠F881	1-532-506-31	FUSE (T6.3AL/250V)(EXCEPT US,CND)			
⚠F881	1-576-109-21	FUSE (T6.3AL/250V)(US,CND,E,HK,AR)			
⚠F882	1-532-504-31	FUSE (T4AL/250V)(E,SP,MY,HK,AR,KR,AUS)			
⚠F883	1-532-504-31	FUSE (T4AL/250V)(E,SP,MY,HK,AR,KR,AUS)			
⚠F884	1-532-506-31	FUSE (T6.3AL/250V)(EXCEPT US,CND)			
⚠F884	1-576-109-21	FUSE (T6.3AL/250V)(US,CND,E,HK,AR)			
		< FUSE HOLDER >			
FH8810	1-533-293-11	FUSE HOLDER			
FH8811	1-533-293-11	FUSE HOLDER			
FH8820	1-533-293-11	FUSE HOLDER (E,SP,MY,HK,AR,KR,AUS)			
FH8821	1-533-293-11	FUSE HOLDER (E,SP,MY,HK,AR,KR,AUS)			
FH8830	1-533-293-11	FUSE HOLDER (E,SP,MY,HK,AR,KR,AUS)			
FH8831	1-533-293-11	FUSE HOLDER (E,SP,MY,HK,AR,KR,AUS)			
FH8840	1-533-293-11	FUSE HOLDER			
FH8841	1-533-293-11	FUSE HOLDER			
		< RESISTOR >			
⚠R881	1-240-877-91	FUSIBLE	0.15	5%	1/2W F
⚠R882	1-240-877-91	FUSIBLE	0.15	5%	1/2W F
⚠R883	1-240-877-91	FUSIBLE	0.15	5%	1/2W F

****

Ref. No.	Part No.	Description			Remark
*	1-658-576-11	SENSOR BOARD			
		**********			
		< IC >			
IC702	8-749-924-18	IC PHOTO INTERRUPTER RPI-1391			
IC703	8-749-924-30	IC PHOTO REFLECTOR GP2S28			

****

	A-4419-327-A	STANDBY BOARD, COMPLETE (AEP,UK,G,CIS)			
		**********			
	A-4419-328-A	STANDBY BOARD, COMPLETE (E,SP,MY,HK,AR)			
		**********			
	A-4419-329-A	STANDBY BOARD, COMPLETE (US,CND)			
		**********			
	A-4419-330-A	STANDBY BOARD, COMPLETE (AUS)			
		**********			
	A-4419-651-A	STANDBY BOARD, COMPLETE (KR)			
		**********			
		< CAPACITOR >			
C11	1-126-937-11	ELECT	4700uF	20%	16V
C12	1-164-159-11	CERAMIC	0.1uF		50V
C13	1-126-933-11	ELECT	100uF	20%	16V
C14	1-126-968-11	ELECT	100uF	20%	50V
C15	1-164-159-11	CERAMIC	0.1uF		50V
C16	1-126-948-11	ELECT	100uF	20%	35V
C17	1-104-664-11	ELECT	47uF	20%	16V
C21	1-113-925-11	CERAMIC	0.01uF	20%	250V (US,CND)
C22	1-164-159-11	CERAMIC	0.1uF		50V (EXCEPT US,CND)
		< CONNECTOR >			
CN11	1-564-321-00	PIN, CONNECTOR 2P (KR)			
* CN11	1-580-230-11	PIN, CONNECTOR (PC BOARD) 2P (EXCEPT KR)			
CN12	1-564-321-00	PIN, CONNECTOR 2P			(US,CND,AEP,UK,G,CIS,KR,AUS)
* CN12	1-564-687-11	PIN, CONNECTOR 3P (E,SP,MY,HK,AR)			
* CN13	1-568-935-11	PIN, CONNECTOR 8P			
		< DIODE >			
D11	8-719-911-19	DIODE 1SS119-25			
D12	8-719-024-99	DIODE 11ES2-NTA2B			
D13	8-719-024-99	DIODE 11ES2-NTA2B			
D14	8-719-024-99	DIODE 11ES2-NTA2B			
D15	8-719-024-99	DIODE 11ES2-NTA2B			
D16	8-719-911-19	DIODE 1SS119-25			
D17	8-719-024-99	DIODE 11ES2-NTA2B			
D18	8-719-024-99	DIODE 11ES2-NTA2B			
D19	8-719-024-99	DIODE 11ES2-NTA2B			
D20	8-719-024-99	DIODE 11ES2-NTA2B			
D21	8-719-986-67	DIODE HZS33-2LTA			
D22	8-719-921-48	DIODE MTZJ-T-72-5.6C			
D23	8-719-911-19	DIODE 1SS119-25			
D24	8-719-911-19	DIODE 1SS119-25			
D25	8-719-911-19	DIODE 1SS119-25			

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

STANDBY | SW | VOL

Ref. No.	Part No.	Description				Remark
		< FUSE >				
⚠F11	1-532-506-31	FUSE (5A/125V)(E,SP,MY,HK,AR)				
⚠F12	1-576-109-21	FUSE (T6.3AL/250V)(US,CND,E)				
		< FUSE HOLDER >				
FH1100	1-533-293-11	FUSE HOLDER (E,SP,MY,HK,AR)				
FH1101	1-533-293-11	FUSE HOLDER (E,SP,MY,HK,AR)				
FH1200	1-533-293-11	FUSE HOLDER (US,CND,E,HK,AR)				
FH1201	1-533-293-11	FUSE HOLDER (US,CND,E,HK,AR)				
		< IC >				
IC11	8-759-604-35	IC M5F78M05L				
		< TRANSISTOR >				
Q11	8-729-119-78	TRANSISTOR 2SC403SP-51				
Q12	8-729-040-19	TRANSISTOR RT1N137L-TP				
Q13	8-729-118-01	TRANSISTOR 2SB1116				
Q14	8-729-040-19	TRANSISTOR 2SC3616-KLM-T1				
Q15	8-729-040-19	TRANSISTOR 2SC3616-KLM-T1				
Q16	8-729-900-63	TRANSISTOR DTA124ES				
Q17	8-729-900-63	TRANSISTOR DTA124ES				
		< RESISTOR >				
R11	1-249-429-11	CARBON	10K	5%	1/4W	
R12	1-249-441-11	CARBON	100K	5%	1/4W	
R13	1-249-417-11	CARBON	1K	5%	1/4W	F
R15	1-249-429-11	CARBON	10K	5%	1/4W	
R16	1-247-807-31	CARBON	100	5%	1/4W	
R17	1-247-807-31	CARBON	100	5%	1/4W	
R18	1-247-807-31	CARBON	100	5%	1/4W	
R18	1-249-427-11	CARBON	6.8K	5%	1/4W	F (US,CND)
R19	1-249-427-11	CARBON	6.8K	5%	1/4W	F
R20	1-249-419-11	CARBON	1.5K	5%	1/4W	F
R23	1-249-416-11	CARBON	820	5%	1/4W	F
R24	1-249-416-11	CARBON	820	5%	1/4W	F
R25	1-247-807-31	CARBON	100	5%	1/4W	
R26	1-249-429-11	CARBON	10K	5%	1/4W	
R28	1-249-427-11	CARBON	6.8K	5%	1/4W	F (EXCEPT US,CND)
R31	1-202-725-00	SOLID	3.3M	10%	1/2W	(US,CND)
		< RELAY >				
RY11	1-755-276-11	RELAY, POWER				
		< TRANSFORMER >				
⚠T11	1-433-832-11	TRANSFORMER, POWER				(E,SP,MY,HK,AR,KR,AUS)
⚠T11	1-433-833-11	TRANSFORMER, POWER (AEP,UK,G,CIS)				
⚠T11	1-433-835-11	TRANSFORMER, POWER (US,CND)				
		< POWER SWITCH >				
⚠VS11	1-771-712-11	SWITCH, POWER (VOLTAGE SELECTOR)				(E,SP,MY,HK,AR)

****

Ref. No.	Part No.	Description	Remark
*	1-671-115-21	SW BOARD ********	
		< CONNECTOR >	
CN601	1-506-486-11	PIN, CONNECTOR 7P	
		< SWITCH >	
S601	1-572-126-21	SWITCH, PUSH (1 KEY)(REC POSITION)	
S602	1-572-126-21	SWITCH, PUSH (1 KEY)(PACK OUT)	
S604	1-771-264-11	SWITCH, PUSH(DETECTION)(1 KEY)	(PB POSITION)

****

	1-673-380-11	VOL BOARD ********	
		< SWITCH >	
S602	1-473-392-11	ENCODER, ROTARY (VOLUME)	

****

		MISCELLANEOUS **********	
8	1-775-102-11	WIRE (FLAT TYPE) (11 CORE)	
9	1-775-192-11	WIRE (FLAT TYPE) (21 CORE) (150mm)	
10	1-775-208-11	WIRE (FLAT TYPE) (23 CORE) (140mm)	
13	1-233-544-14	ENCAPSULATED COMPONENT (US,CND)	
13	1-233-545-14	ENCAPSULATED COMPONENT (AR,KR,AUS)	
13	1-233-546-13	ENCAPSULATED COMPONENT (SP,MY,HK)	
13	1-693-443-11	TUNER UNIT (FM/AM) (AEP,UK,G,CIS)	
13	1-693-453-11	TUNER UNIT (FM/AM) (E)	
54	1-773-043-11	WIRE (FLAT TYPE) (17 CORE)	
55	1-773-025-11	WIRE (FLAT TYPE) (15 CORE) (330mm)	
56	1-769-976-11	WIRE (FLAT TYPE) (13 CORE)	(US,CND,E,AR,KR,AUS)
56	1-773-008-11	WIRE (FLAT TYPE) (15 CORE) (140mm)	(AEP,UK,G,CIS,SP,MY,HK)
57	1-773-185-11	WIRE (FLAT TYPE) (23 CORE)	
59	1-569-007-11	ADAPTOR, CONVERSION 2P (E)	
59	1-569-008-21	ADAPTOR, CONVERSION 2P (SP,MY)	
59	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (HK)	
⚠60	1-696-845-11	CORD, POWER (AUS)	
⚠60	1-769-079-11	CORD, POWER (KR)	
⚠60	1-777-071-41	CORD, POWER (AEP,G,CIS,SP,MY)	
⚠60	1-777-514-11	CORD, POWER (UK)	
⚠60	1-782-315-21	CORD, POWER (E)	
⚠60	1-783-820-21	CORD, POWER (US,CND)	
⚠60	1-783-941-31	CORD, POWER (AR)	
65	1-569-972-21	SOCKET, SHORT 2P	
67	1-783-570-11	WIRE (FLAT TYPE)(19 CORE)	
122	1-675-345-11	WIRE (FLAT TYPE)(23 CORE)	
125	1-673-837-21	TC STOPPER A BOARD	
126	1-673-838-21	TC STOPPER B BOARD	
257	1-452-925-21	MAGNET ASSY	
258	1-776-042-11	WIRE (FLAT TYPE) (8 CORE)	
⚠301	8-820-020-02	OPTICAL PICK-UP KSS-213D/Q-NP	
302	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
* 558	1-667-954-11	FLEXIBLE BOARD	
⚠560	8-583-028-01	OPTICAL PICK-UP KMS-260A/K1NP	
FL601	1-517-841-11	INDICATOR TUBE, FLUORESCENT	
HP101	A-2056-681-A	DECK (A) ASSY, HEAD (230AWR2)	
HP101	A-2056-681-B	DECK (A) ASSY, HEAD (230PWR2)	
HR901	1-500-502-11	HEAD, OVER WRITE	
HRPE101	A-2056-682-A	DECK (B) ASSY, HEAD (230AWR2)	
HRPE101	A-2056-682-B	DECK (B) ASSY, HEAD (230PWR2)	
M1	A-2004-628-A	MOTOR ASSY, CAPSTAN	
M101	A-4672-475-A	MOTOR ASSY, SPINDLE	
M102	A-4672-474-A	MOTOR ASSY, SLED	
M103	X-4949-264-1	MOTOR ASSY, LOADING	
M201	X-4917-523-3	MOTOR ASSY (SPINDLE)	
M202	X-4917-504-1	MOTOR ASSY (SLED)	
M701	A-4672-004-A	MOTOR ASSY (TURN)	
M801	A-4672-004-A	MOTOR ASSY (SLIDE)	
S102	1-762-148-21	SWITCH, PUSH (2 KEY)	
S811	1-473-335-11	ENCODER, ROTARY	
⚠T11	1-433-832-11	TRANSFORMER, POWER	(E,SP,MY,HK,AR,KR,AUS)
⚠T11	1-433-833-11	TRANSFORMER, POWER (AEP,UK,G,CIS)	
⚠T11	1-433-835-11	TRANSFORMER, POWER (US,CND)	
⚠T951	1-433-790-11	TRANSFORMER, POWER (CND)	
⚠T951	1-433-791-11	TRANSFORMER, POWER (AEP,UK,G,CIS)	
⚠T951	1-433-792-11	TRANSFORMER, POWER (US)	
⚠T951	1-433-793-11	TRANSFORMER, POWER (KR)	
⚠T951	1-433-794-11	TRANSFORMER, POWER (E,SP,MY,HK,AR,AUS)	

****

****
HARDWARE LIST
****

#1	7-685-871-01	SCREW +BVTT 3X6 (S)
#2	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S
#3	7-685-880-09	SCREW +BVTT 4X6 (S)
#5	7-685-852-04	SCREW +BVTT 2X5 (S)
#6	7-685-872-09	SCREW +BVTT 3X10 (S)
#7	7-682-553-04	SCREW +P 3X20
#8	7-685-851-04	SCREW +BVTT 2X4 (S)
#9	7-628-254-15	SCREW +PS 2.6X6
#10	7-628-254-50	SCREW +PS 2.6X16
#11	7-685-861-01	SCREW +BVTT 2.6X5 (S)
#12	7-685-647-01	SCREW +BVTP 3X10 TYPE2 N-S

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

9-928-878-11

Sony Corporation
Home Audio Company

99D0989-1
Printed in Japan © 1999. 4
Published by Quality Assurance Dept.